



**PLANNING COMMISSION MEETING**  
**MONDAY, July 19, 2021**  
**City Council Chambers, 400 East Military Avenue, Fremont NE**  
**5:00 P.M.**

**The Municipal Building is undergoing renovations to install a new elevator the elevator is temporarily out of service. The west side of the building is closed. Please enter through the east door. You can take the stairs to the second floor.**

**Videoconference Meeting Participation Notice:** In the interest of public health and safety, this meeting will also be conducted online through the Zoom link below. Citizens may also call into the meeting with the phone number below.

Jennifer Dam is inviting you to a scheduled Zoom meeting.

**Topic:** July 19, 2021 Planning Commission

**Time:** Jul 14, 2021 01:00 PM Central Time (US and Canada)

**Join Zoom Meeting**

**<https://us06web.zoom.us/j/86299987351?pwd=OUhkNVVVKaitSV2pJd3dUb3lqWHk5Zz09>**

**Meeting ID:** 862 9998 7351

**Passcode:** 045653

**One tap mobile**

**+17207072699,,86299987351# US (Denver)**

**+12532158782,,86299987351# US (Tacoma)**

**Dial by your location**

**+1 720 707 2699 US (Denver)**

**+1 253 215 8782 US (Tacoma)**

**+1 346 248 7799 US (Houston)**

**+1 646 558 8656 US (New York)**

**+1 301 715 8592 US (Washington DC)**

**+1 312 626 6799 US (Chicago)**

**Meeting ID:** 862 9998 7351

**Find your local number:** **<https://us06web.zoom.us/u/kcOtA2VA6Q>**



**PLANNING COMMISSION L MEETING**  
**MONDAY, July 19 2021**  
**City Council Chambers, 400 East Military Avenue, Fremont NE**  
**5:00 P.M.**

1. Call to Order.
2. Roll Call.
3. Dispense with the reading and approve the minutes of the May 24, 2021 Special Meeting as prepared.
4. Dispense with the reading and approve the minutes of the June 10, 2021 Special Meeting as prepared.
5. A request by Mary Ann Diers Yost for a Change of Zone from R, Rural to GC, General Commercial on property generally located west of 2900 Elk Lane, Fremont, Nebraska.
6. A request by Mary Ann Diers Yost for a voluntary annexation of property generally located west of 2900 Elk Lane, Fremont, Nebraska.
7. A request by Mary Ann Diers Yost for the Diers 7<sup>th</sup> Addition Final Plat on property generally located west of 2900 Elk Lane, Fremont, Nebraska.
8. A request by Greg Hall on behalf of Kent Douglas Ritthaler for the Ritz Lake Replat 7 generally located south of E 32<sup>nd</sup> Blvd., along N. Ritz Pl. and E. Ritz Pl., Fremont, NE.
9. A request by Greg Hall on behalf of Kent Douglas Ritthaler for the Ritz Lake Replat 8 generally located along E 34<sup>th</sup> Ct, Fremont, NE.
10. A request by the City of Fremont for a Preliminary Plat for Fremont Technology Park 3<sup>rd</sup> Addition, generally located at 29<sup>th</sup> and N Lincoln Ave.
11. A request by the City of Fremont for a Final Plat for Fremont Technology Park 3<sup>rd</sup> Addition, generally located at 29<sup>th</sup> and N Lincoln Ave.
12. A request by Jody Sanders, Finance Director for the City of Fremont for a review of the Capital Improvements Plan for conformity with the Comprehensive Plan.
13. A request by Don Simon, Chief Building Official for the City of Fremont for a review of changes to Chapter 9 Building Regulations of the Fremont Municipal Code.
14. A presentation by Veronica Trujillo, City Engineer, about the draft "Drainage Criteria Manual."

THIS MEETING WAS PRECEDED BY PUBLICIZED NOTICE IN THE FREMONT TRIBUNE, THE AGENDA DISPLAYED IN THE LOBBY OF THE MUNICIPAL BUILDING AND POSTED ONLINE AT [WWW.FREMONTNE.GOV](http://WWW.FREMONTNE.GOV) IN ACCORDANCE WITH THE NEBRASKA OPEN MEETINGS ACT, A COPY OF WHICH IS POSTED CONTINUALLY IN THE COUNCIL CHAMBERS FOR PUBLIC INSPECTION, AND SAID MEETING IS OPEN TO THE PUBLIC. A COPY OF THE AGENDA WAS ALSO KEPT CONTINUALLY CURRENT AND AVAILABLE TO THE PUBLIC IN THE PRINCIPLE OFFICE OF THE DEPARTMENT OF PLANNING, 400 EAST MILITARY AVENUE. THE PLANNING COMMISSION RESERVES THE RIGHT TO ADJUST THE ORDER OF ITEMS ON THIS AGENDA.

## PLANNING COMMISSION MINUTES

MAY 24, 2021

5:00 p.m. Special Meeting

Chairman Jarod Borisow called the special meeting to order at 5:00 p.m. He stated that a copy of the Open Meetings Act is posted continually for public inspection located near the entrance door by the agendas. Roll call showed Chairman Borisow and Commissioners, Nielsen, Landholm, Lathrop, Carlson, Washburn and Horeis present. A quorum was established.

Chairman Borisow read the item: dispense with the reading of the minutes of the April 19 2021 meeting. Commissioner Horeis made a motion to approve the minutes as prepared. Commissioner Carlson seconded the motion. By a roll call vote, Borisow, Lathrop, Nielsen, Carlson, Landholm, Washburn and Horeis voted in favor. The motion carried 7-0.

Chairman Borisow read the item: A request by the City of Fremont for a revised Preliminary Plat for Fremont Technology Park, generally located at 29<sup>th</sup> Street and North Lincoln Ave. Planning Director Jennifer Dam presented her staff report. Chairman Borisow opened the public hearing. One person spoke regarding drainage and requested to have information submitted for the record. Commissioner Landholm made a motion to receive the paperwork. Commissioner Horeis seconded. By a roll call vote, Nielsen, Carlson, Landholm, Lathrop, Horeis, Washburn and Borisow voted in favor. Motion carried 7-0. A second person spoke against the measure and requested his information become part of the record. Commissioner Washburn made a motion to accept the paperwork. Commissioner Horeis seconded. By a roll call vote, Lathrop, Landholm, Nielsen, Carlson, Horeis, Washburn and Borisow all voted in favor. Motion carried 7-0. Chairman Borisow closed the public hearing. The Planning Commission discussed the drainage concerns and asked numerous questions of the Public Works Director Dave Goedeken. Commissioner Horeis made a motion to continue the item until additional information was available to handle a 100 year storm. The motion was seconded by Carlson. Upon further discussion it was clarified that a 100 year storm would cause flooding anyway. The motion was withdrawn. Commissioner Nielsen made a motion to recommend approval of the preliminary plat and Commissioner Landholm seconded the motion. By roll call vote, Lathrop, Nielsen, Horeis, Landholm, Washburn, Borisow and Carlson voted in favor. The motion carried 7-0.

Chairman Borisow read the item: A request by the City of Fremont for a final plat for Fremont Technology Park 3<sup>rd</sup> Addition, generally located at 29<sup>th</sup> Street and North Lincoln Ave. Jennifer Dam presented her staff report. Chairman Borisow opened the public hearing. Two individuals spoke against the final plat stating drainage concerns. Chairman Borisow closed the public hearing. The Planning Commission discussed the drainage concerns. Commissioner Horeis made a motion to table the request until more information from the engineer of record could be considered. Commissioner Carlson seconded the motion. By a roll call vote Nielsen, Lathrop, Borisow, Horeis, Carlson, all voted in favor. Commission Landholm and Washburn voted nay. Motion Carried 5-2.

Commissioner Landholm made a motion to adjourn and Commissioner Carlson seconded. By a roll call vote Lathrop, Horeis, Carlson, Borisow, Washburn, Landholm and Nielsen all voted in favor. Motion carried 7-0 Meeting adjourned at approximately 5:55pm.

APPROVED

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Jarod Borisow, Chairman

ATTEST

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Jennifer Dam, Director of Planning



PLANNING COMMISSION MINUTES  
JUNE 10, 2021  
5:30 p.m. SPECIAL MEETING WITH CITY COUNCIL

Mayor Spellerberg called the meeting to order at 5:30 pm. He stated that a copy of the Open Meetings Act is posted continually for public inspection located near the entrance door by the agendas. Roll call showed Commissioners, Landholm, Lathrop, Carlson, Jaeger, Washburn and Horeis present. A quorum was established.

Houseal-Lavigne provided an overview of:

- A. Existing Conditions Report (No Action Taken)
- B. Unified Development Code Diagnostic Report (no action taken)

Commissioner Landholm made a motion to adjourn the Planning Commission which was seconded by Commissioner Washburn. Commissioners Carlson, Jaeger, Washburn, Horeis, Landholm and Lathrop voted aye. The motion carried 6-0. The meeting adjourned at 7:00 pm

APPROVED

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Jarod Borisow, Chairman

ATTEST

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Jennifer Dam, Director of Planning

## STAFF REPORT

TO: Planning Commission  
FROM: Jennifer L. Dam, AICP  
DATE: July 19, 2021  
SUBJECT: Change of Zone from R, Rural to GC, General Commercial

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**Recommendation:** Recommend approval to City Council

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### **Background:**

Mary Ann Diers Yost has requested a change of zone from R, Rural to GC, General Commercial on property generally located between E 23<sup>rd</sup> St. and Elk Lane, about 200 feet west of Deer Crossing.

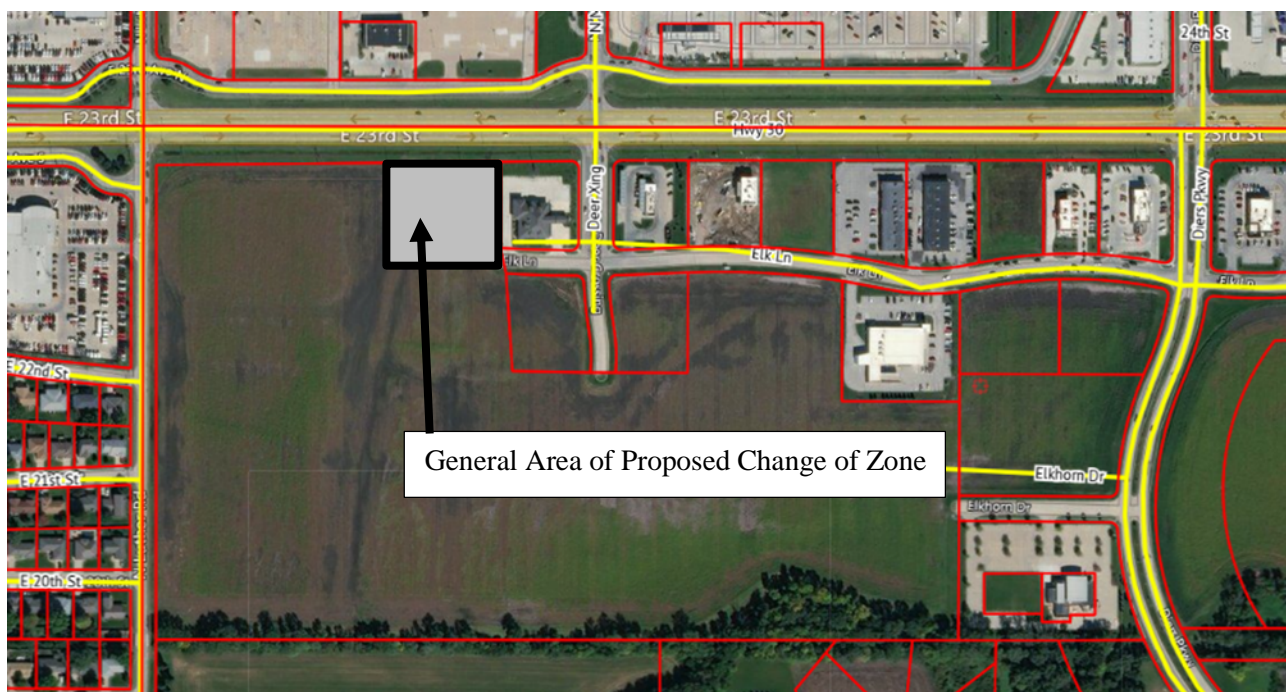
This application is associated with requests for a final plat and annexation.

The Future Land Use Map of the Comprehensive Plan shows the area for future commercial development.

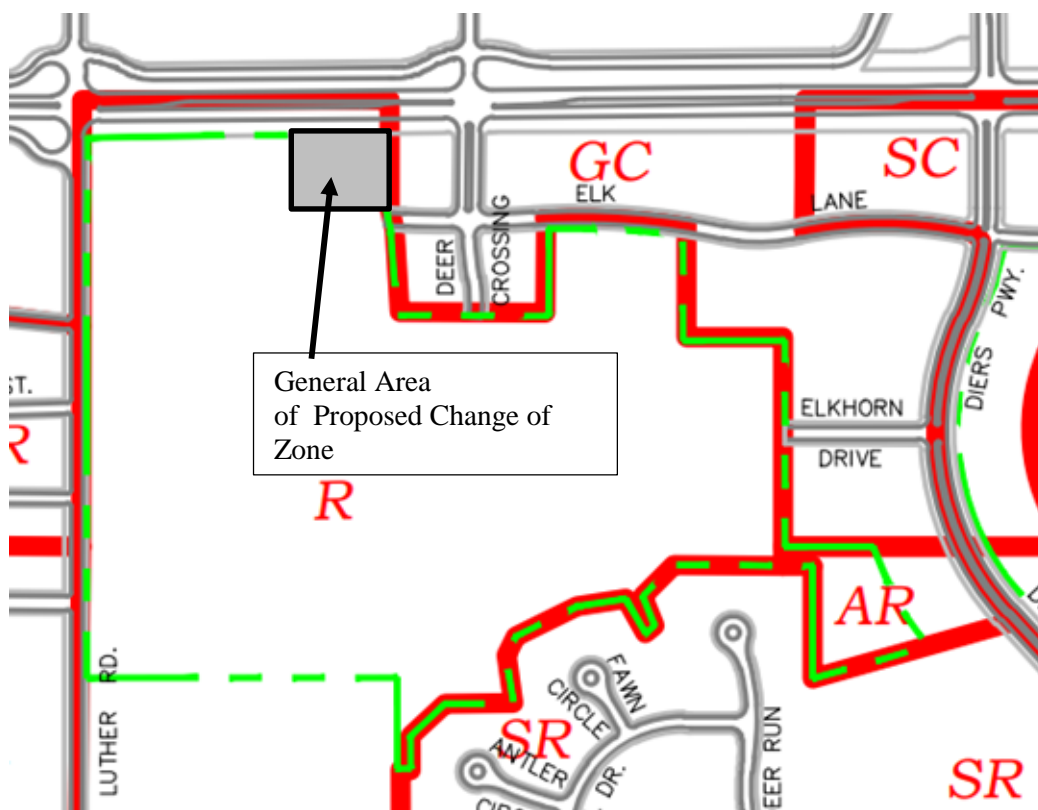
The areas to the north, east and southeast are commercially zoned. The area immediately west is zoned R, Rural, but is shown as commercial in the Comprehensive Plan and in the approved Preliminary Plat.

The proposed final plat is consistent with the approved Diers Second Addition Preliminary Plat.

### Vicinity Map



## Zoning Map



## STAFF REPORT

TO: Planning Commission  
FROM: Jennifer L. Dam, AICP  
DATE: July 19, 2021  
SUBJECT: Annexation

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**Recommendation:** Recommend approval to City Council

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### **Background:**

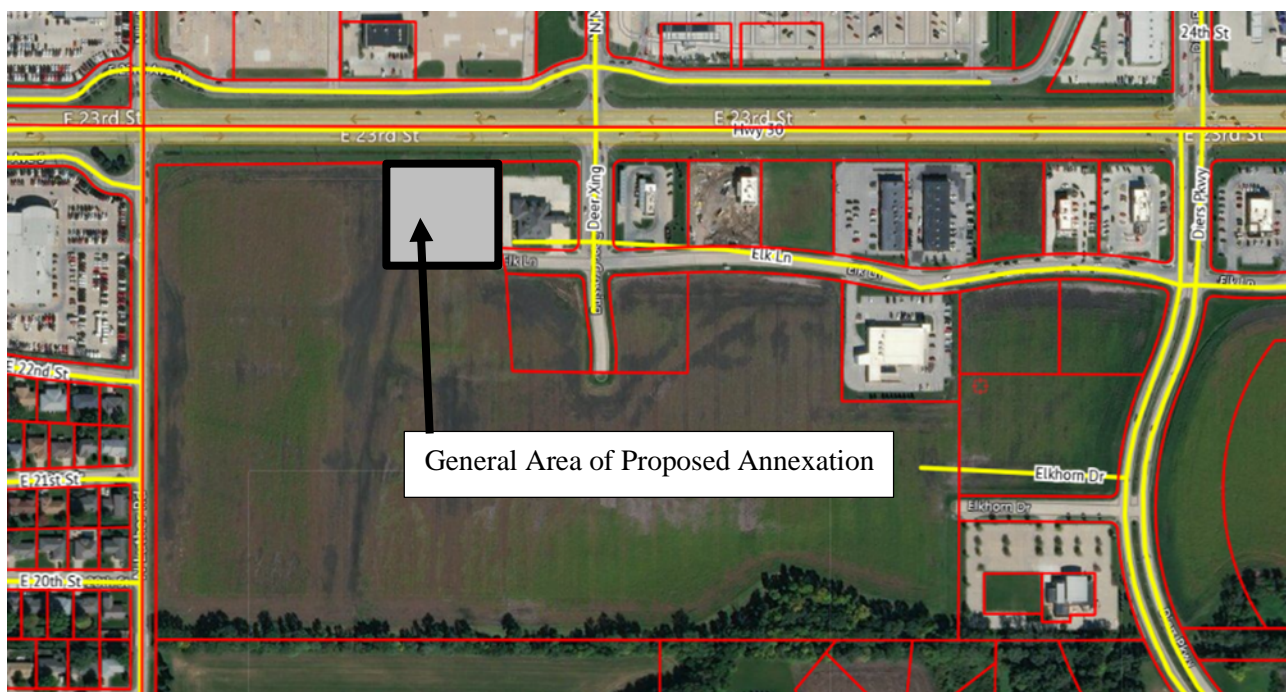
Mary Ann Diers Yost has requested a voluntary annexation of property generally located between E 23<sup>rd</sup> St. and Elk Lane, about 200 feet west of Deer Crossing. The applicant would like this to be conditioned upon approval of the requests for a change of zone and final plat.

The property is currently zoned R, Rural. This application is associated with requests for a final plat and a change of zone to GC, General Commercial.

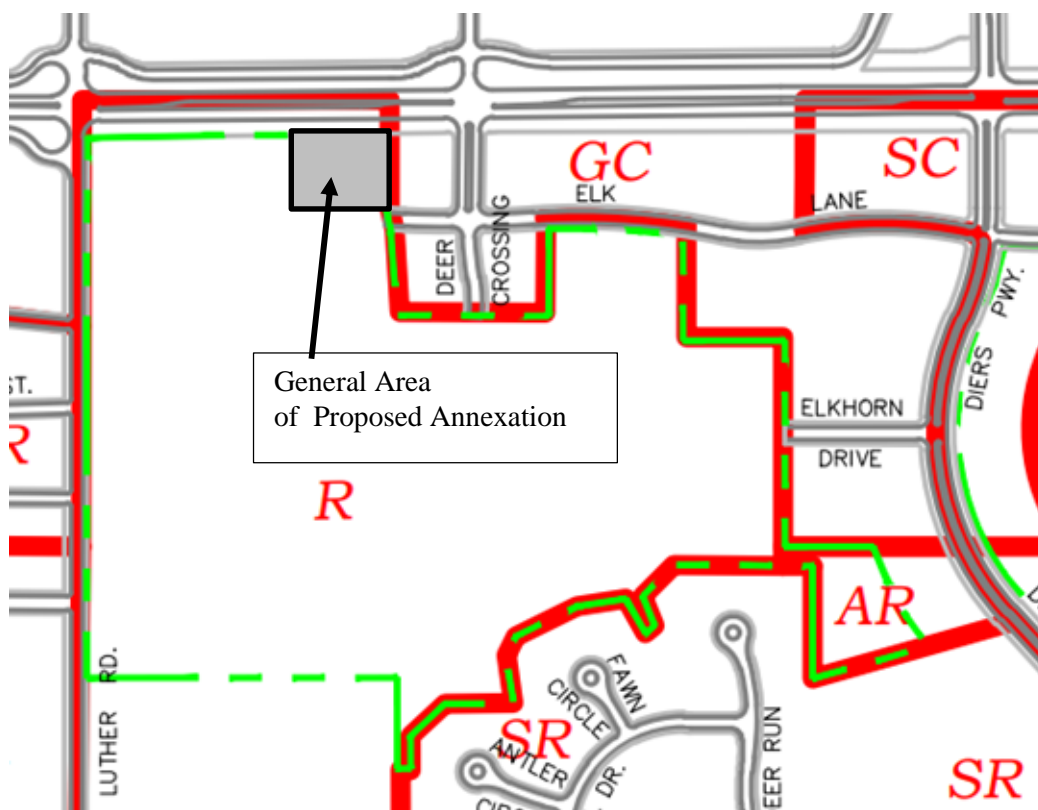
The property is contiguous to the city limits.

This request is consistent with the Comprehensive Plan and State Statutes.

### Vicinity Map



## Zoning Map



## STAFF REPORT

TO: Planning Commission  
FROM: Jennifer L. Dam, AICP  
DATE: July 19, 2021  
SUBJECT: Diers 7<sup>th</sup> Addition final plat

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**Recommendation:** Recommend approval to City Council

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### **Background:**

Mary Ann Diers Yost has requested approval of the Diers 7<sup>th</sup> Addition final plat on property generally located between E 23<sup>rd</sup> St. and Elk Lane, about 200 feet west of Deer Crossing.

This application is associated with requests for a change of zone and annexation.

The Future Land Use Map of the Comprehensive Plan shows the area for future commercial development.

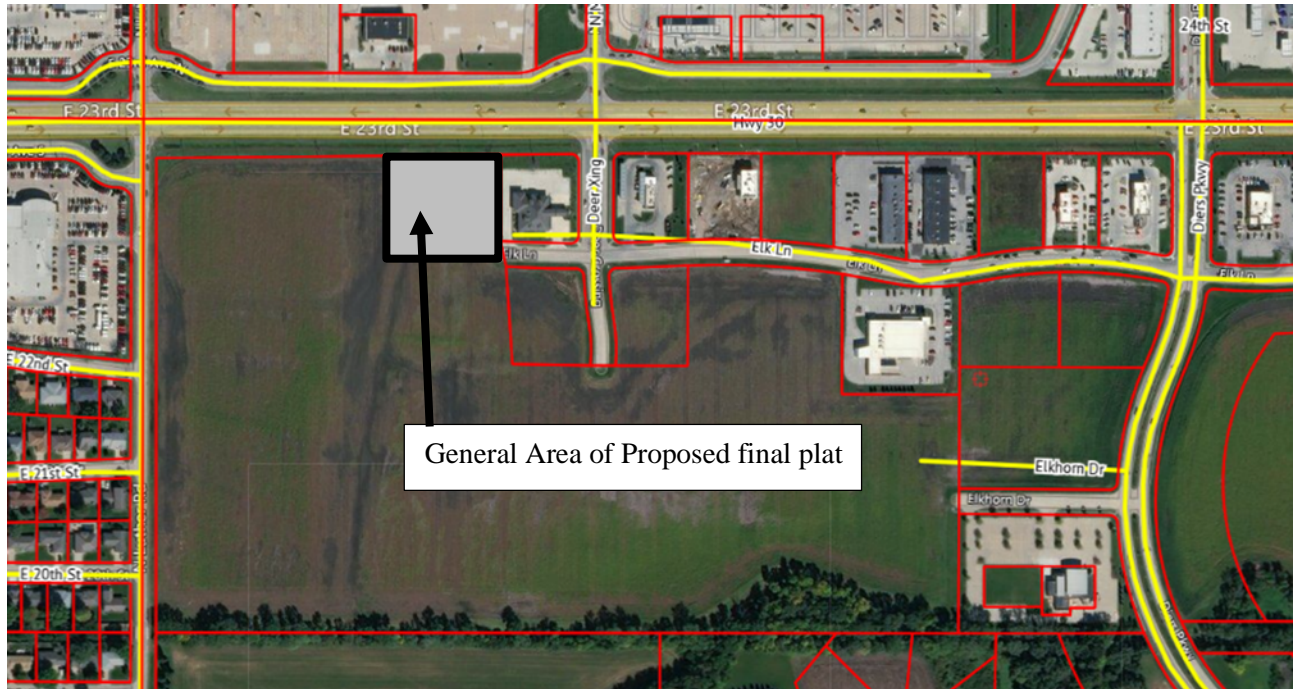
The areas to the north, east and southeast are commercially zoned. The area immediately west is zoned R, Rural, but is shown as commercial in the Comprehensive Plan and in the approved Preliminary Plat.

The proposed final plat is consistent with the approved Diers Second Addition Preliminary Plat.

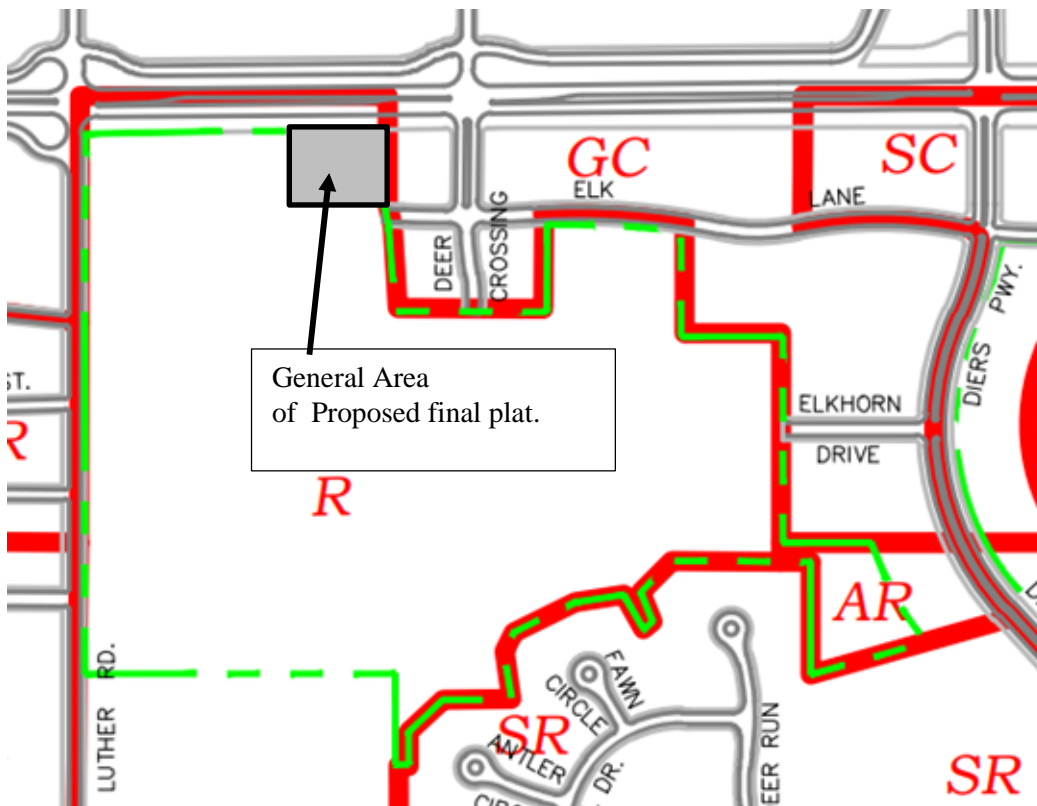
A subdivision agreement is not needed to install the street and extend the utilities one lot to the west.



## Vicinity Map



## Zoning Map



TO THE CITY OF FREMONT, NEBRASKA.  
PART OF THE NW1/4 NW1/4 OF SECTION 18, TOWNSHIP 17  
NORTH, RANGE 9 EAST OF THE 6TH P.M., DODGE COUNTY,  
NEBRASKA.

A PARCEL OF LAND IN THE NW1/4 NW1/4 OF SECTION 18, TOWNSHIP 17 NORTH, RANGE 9 EAST OF THE 6TH P.M., DODGE COUNTY, NEBRASKA MORE PARTICULARLY DESCRIBED AS FOLLOWS:  
BEGINNING AT THE NORTHWEST CORNER OF LOT 1, BLOCK 3, DIERS THIRD ADDITION; THENCE S00°06'37"W ALONG THE WEST LINE OF SAID LOT 1 A DISTANCE OF 218.02 FEET TO THE SOUTHWEST CORNER OF SAID LOT 1; THENCE S12°39'27"E A DISTANCE OF 67.14 FEET TO THE NORTHWEST CORNER OF LOT 1, BLOCK 4, DIERS THIRD ADDITION; THENCE ALONG A 1967.50 FOOT RADIUS CURVE TO THE LEFT AN ARC LENGTH OF 100.12 FEET, THROUGH A CENTRAL ANGLE OF 02°54'56", HAVING A CHORD BEARING N89°21'19"W, AND A CHORD LENGTH OF 100.11 FEET; THENCE ALONG A 567.50 FOOT RADIUS CURVE TO THE LEFT AN ARC LENGTH OF 168.04 FEET, THROUGH A CENTRAL ANGLE OF 16°57'56", HAVING A CHORD BEARING S80°42'15"W, AND A CHORD LENGTH OF 167.43 FEET; THENCE N17°46'43"W A DISTANCE OF 65.00 FEET; THENCE N00°06'37"E A DISTANCE OF 242.38 FEET TO THE SOUTH LINE OF 23RD STREET; THENCE N88°54'13"E ALONG SAID SOUTH LINE A DISTANCE OF 270.47 FEET TO THE POINT OF BEGINNING; CONTAINING 1.78 ACRES, MORE OR LESS.

KNOW ALL MEN BY THESE PRESENTS: THAT CHARLES H. DIERS, L.L.C., A NEBRASKA LIMITED LIABILITY COMPANY, SUZANNE DIERS, MARY ANN DIERS VOST, CHARLES E. DIERS AND MICHAEL DIERS, EACH AS MANAGER AND TOGETHER AS THE ENTIRE BOARD OF MANAGERS; OWNER AND PROPRIETOR OF THE TRACT OF LAND SHOWN AND DESCRIBED HEREON, HAS CAUSED THE SAME TO BE SUBDIVIDED INTO 1 LOT, SAID SUBDIVISION TO BE KNOWN AS DIERS SEVENTH ADDITION, THE LOT TO BE NUMBERED AS SHOWN AND APPROVES OF THE DISPOSITION OF THE PROPERTY AS SHOWN ON THIS PLAT AND HEREBY DEDICATE TO THE PUBLIC FOR PERPETUAL PUBLIC USE THE STREET TO BE KNOWN AS ELK LANE, AT THE LOCATION AND TO THE WIDTH SHOWN HEREON AND HEREBY GRANTS PERPETUAL EASEMENTS AT THE LOCATIONS AND TO THE WIDTHS SHOWN HEREON TO THE CITY OF FREMONT, ANY PUBLIC OR PRIVATE UTILITY COMPANY, AND FOR THE USE OF ABUTTING PROPERTY OWNERS, FOR THE SOLE PURPOSE OF CONSTRUCTION AND MAINTENANCE OF UTILITY LINES AND PIPES AND DRAINAGE FACILITIES. NO PERMANENT BUILDING OR RETAINING WALL SHALL BE PLACED IN THE ABOVE DESCRIBED EASEMENTWAYS, BUT THE SAME MAY BE USED FOR GARDENS, LANDSCAPING AND OTHER PURPOSES THAT DO NOT THEN OR LATER INTERFERE WITH THE AFORESAID USES OR RIGHTS HEREIN GRANTED.

\_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_, A.D.

STEPHEN W. DODD, LS-503



FINAL PLAT



**Dodd Engineering & Surveying LLC**  
Stephen W. Dodd, P.E. & L.S.    Ph. 402-720-5017



## STAFF REPORT

TO: Planning Commission  
FROM: Jennifer L. Dam, AICP  
DATE: July 19, 2021  
SUBJECT: Ritz Lake Replat 7

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**Recommendation:** Recommend approval to City Council

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### **Background:**

This is a request for a replat of Lots 2 through 9, Block 2, Ritz Lake Addition and Lot 13R, Ritz Lake Addition Replat 5, located in the NW  $\frac{1}{4}$  of Section 7, T17N, R9E, generally located along Ritz Place, just west of N. Luther Road.

The proposed replat adjusts the lot lines and reduces the number of lots in the platted area from ten to nine.

The property is zoned PD, Planned Development.

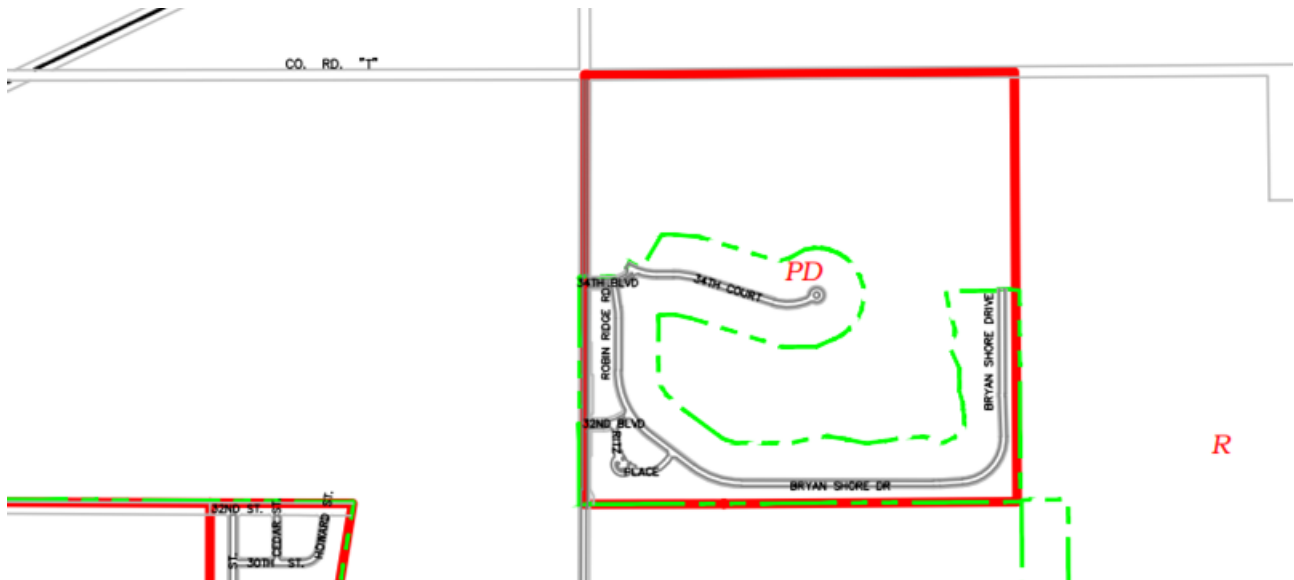
The proposed final plat is consistent with the approved Planned Development and the Ritz Lake Preliminary Plat.

A subdivision agreement is not needed to adjust the lot lines.

Vicinity Map



Zoning Map

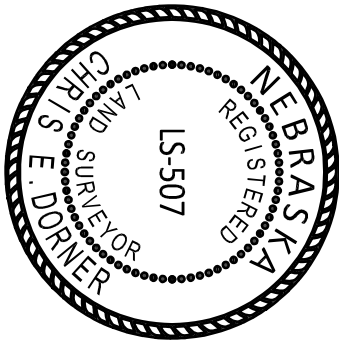


RITZ LAKE REPLAT 7  
LOTS 2 THRU 9, INCLUSIVE, BLOCK 2

BEING A REPLATTING OF LOTS 2 THRU 9, INCLUSIVE, BLOCK 2, RITZ LAKE ADDITION AND LOT 13R, RITZ LAKE ADDITION  
REPLAT 5, BOTH LOCATED IN THE NW 1/4 OF SECTION 7, T17N, R9E OF THE 6th P.M., DODGE COUNTY, NEBRASKA.

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT I HAVE MADE A GROUND SURVEY OF THE SUBDIVISION  
DESCRIBED HEREIN AND THAT PERMANENT MONUMENTS HAVE BEEN PLACED AT ALL LOT  
CORNERS, ANGLE POINTS AND AT THE ENDS OF ALL CURVES IN RITZ LAKE REPLAT 7  
(LOTS NUMBERED AS SHOWN) A SUBDIVISION IN THE NW 1/4 OF SECTION 7, T17N,  
R9E OF THE 6TH P.M., DODGE COUNTY, NEBRASKA.



MARCH 17, 2021  
DATE:

CHRIS E. DÖRNER  
NEBRASKA RLS 507

LEGAL DESCRIPTION

A TRACT OF LAND COMPOSED OF LOTS 2 THRU 9, INCLUSIVE, BLOCK 2, RITZ LAKE  
ADDITION AND LOT 13R, RITZ LAKE ADDITION REPLAT 5, ALL LOCATED IN THE NW 1/4  
OF SECTION 7, T17N, R9E OF THE 6th P.M., DODGE COUNTY, NEBRASKA, ALL MORE  
PARTICULARLY DESCRIBED AS FOLLOWS, BEGINNING AT THE NORTHWEST CORNER OF  
SAID LOT 2;

THENCE S89°56'58"E (BASED ON THE DODGE COUNTY NEBRASKA LOW DISTORTION  
PROJECTION) 125.07 FEET ON THE NORTH LINE OF SAID LOT 2 TO THE NORTHEAST  
CORNER THEREOF;

THENCE S00°00'52"W 75.71 FEET ON THE EAST LINE OF SAID LOT 2;

THENCE SOUTHEASTERLY ON THE EAST LINES OF SAID LOTS 3, 4, 5, 6 AND 7 ON A  
87.50 FOOT RADIUS CURVE TO THE LEFT, CHORD BEARING S45°00'24"E, CHORD  
DISTANCE 171.51 FEET, AN ARC DISTANCE OF 239.86 FEET TO THE NORTH LINE OF  
SAID LOT 7;

THENCE N89°56'41"E 93.14 FEET ON THE NORTH LINES OF SAID LOTS 7 AND 8;

THENCE NORTHEASTERLY ON THE NORTH LINES OF SAID LOTS 9, 10 AND 11 ON A  
177.50 FOOT RADIUS CURVE TO THE LEFT, CHORD BEARING N67°35'02"E, CHORD  
DISTANCE 135.47 FEET, AN ARC DISTANCE OF 138.99 FEET TO THE NORTHEAST  
CORNER OF SAID LOT 11;

THENCE S44°40'24"E 138.28 FEET ON THE EASTERLY LINE OF SAID LOT 11 TO THE  
SOUTHEAST CORNER THEREOF;

THENCE S36°53'14"W 97.81 FEET ON THE SOUTH LINE OF SAID LOT 11;

THENCE S89°57'18"W 488.04 FEET ON THE SOUTH LINES OF SAID LOTS 5, 6, 7, 8,  
9 AND 10 TO A CORNER OF SAID LOT 5;

THENCE N26°37'36"W 56.05 FEET ON THE WEST LINE OF SAID LOT 5 TO A CORNER  
OF SAID LOT 3;

THENCE N00°00'12"W 199.94 FEET ON THE WEST LINES OF SAID LOTS 3, 4 AND 5  
TO A CORNER OF SAID LOT 3;

THENCE N89°37'40"E 9.97 FEET ON THE WEST LINE OF SAID LOT 3 TO A CORNER  
THEREOF;

THENCE N00°00'35"W 72.15 FEET ON THE WEST LINE OF SAID LOTS 2 AND 3 TO THE  
POINT OF BEGINNING.

DEDICATION

KNOW ALL MEN BY THESE PRESENTS, THAT THE RITZ LAKE, LLC., A NEBRASKA LIMITED  
LIABILITY COMPANY BEING THE OWNERS AND PROPRIETOR OF THE PROPERTY  
DESCRIBED WITHIN THE LEGAL DESCRIPTION AND EMBRACED WITHIN THIS PLAT, HAS  
CAUSED SAID LAND TO BE PLATTED INTO EIGHT (8) LOTS TO BE NUMBERED AS  
SHOWN, SAID PLAT TO BE HEREAFTER KNOWN AS RITZ LAKE REPLAT 7 SAID OWNER  
HEREBY RATIFIES AND APPROVES OF THE DISPOSITION OF THEIR PROPERTY, AS SHOWN  
ON THIS PLAT, SAID OWNER GRANTS UTILITY EASEMENTS AT THE LOCATIONS AND  
WIDTHS SHOWN ON THIS PLAT, WE DO ALSO GRANT EASEMENTS TO THE CITY OF  
FREMONT, SAID EASEMENTS ARE RESERVED FOR THE USE OF PUBLIC UTILITIES, AND  
ARE SUBJECT TO THE PARAMOUNT RIGHT OF THE PUBLIC UTILITY TO INSTALL, REPAIR,  
REPLACE AND MAINTAIN ITS INSTALLATIONS.

THE RITZ LAKE, LLC.,  
A NEBRASKA LIMITED LIABILITY COMPANY

BY: \_\_\_\_\_  
KENT DOUGLAS RITTHALER, MANAGING MEMBER

ACKNOWLEDGEMENT OF NOTARY

STATE OF NEBRASKA)  
COUNTY OF DOUGLAS)  
THE FOREGOING DEDICATION WAS ACKNOWLEDGED BEFORE ME THIS \_\_\_\_\_ DAY OF  
RITZ LAKE, LLC., A NEBRASKA LIMITED LIABILITY COMPANY ON BEHALF OF SAID  
COMPANY.

NOTARY PUBLIC

APPROVAL OF FREMONT CITY COUNCIL

THIS PLAT AND DEDICATION OF RITZ LAKE REPLAT 7 WAS APPROVED BY THE FREMONT CITY COUNCIL,  
DODGE COUNTY, NEBRASKA ON THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2021.

JOEY SPELLERBERG, MAYOR

TYLER FICKEN, CITY CLERK

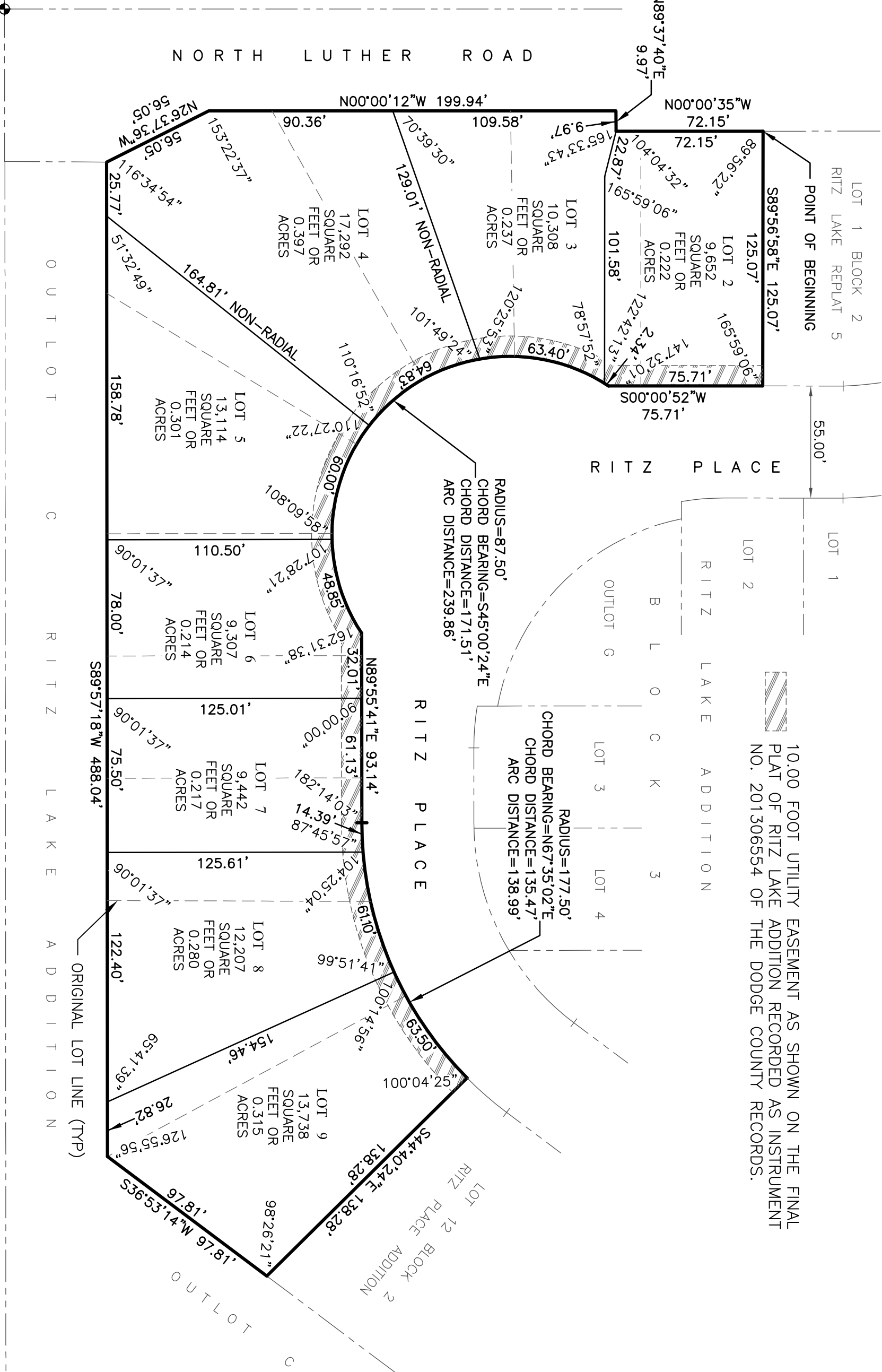
APPROVAL OF CITY OF FREMONT PLANNING COMMISSION

THIS PLAT OF RITZ LAKE REPLAT 7 WAS APPROVED BY THE CITY OF FREMONT, DODGE COUNTY,  
NEBRASKA PLANNING COMMISSION ON THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2021.

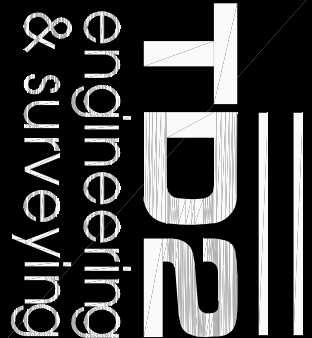
CHAIRPERSON

NOTES:

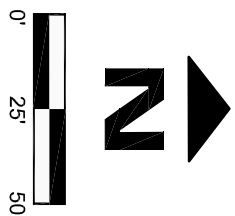
1. ANGLES SHOWN ADJACENT TO CURVES ARE  
MEASURED TO THE CHORD LINE OF THE CURVE.
2. DIMENSIONS IN PARENTHESIS PERTAIN TO EASEMENTS.



RITZ LAKE REPLAT 7  
INCLUSIVE, BLOCK 2,  
LOTS 2 THRU 9, INCLUSIVE



thompson, dreessen & dorner, inc.  
10836 Old Mill Rd  
Omaha, NE 68154  
p-402.330.8860 f-402.330.5866  
td2co.com



Revision Dates		
No.	Description	MM-DD-YY
-	-	-
-	-	-
-	-	-

Job No.: A1436-21-2A  
Drawn By: RJR  
Reviewed By: CED  
Date: MARCH 17, 2021  
Book: 21/10  
Page: 34

CITY OF FREMONT  
FINAL PLAT

## STAFF REPORT

TO: Planning Commission  
FROM: Jennifer L. Dam, AICP  
DATE: July 19, 2021  
SUBJECT: Ritz Lake Replat 8

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**Recommendation:** Recommend approval to City Council

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### **Background:**

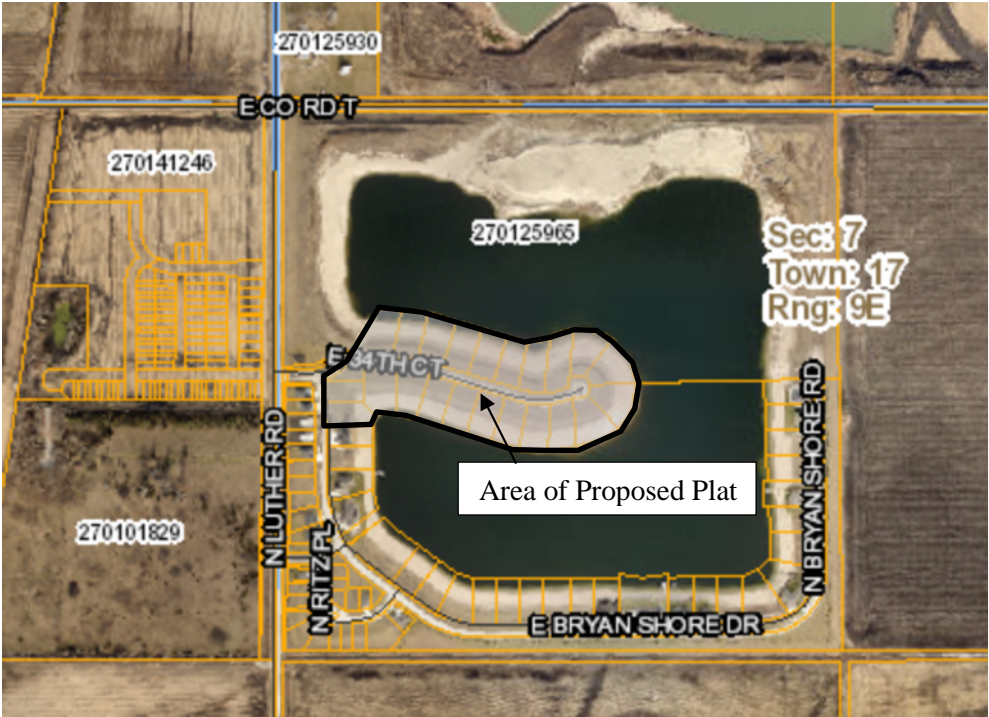
This is a request for a replat of Lots 1-5, and 16-18, Block 4, Ritz Lake Addition and Lot 14, Block 4 Ritz Lake Addition Replat 2, and Lots 6-13, 15, 15A, and 19-21, Ritz Lake Addition Replat 3, located in the NW ¼ of Section 7, T17N, R9E, generally located along East 34<sup>th</sup> Court.

The proposed replat adjusts the lot lines and reduces the number of lots in the platted area from twenty-two to twenty-one.

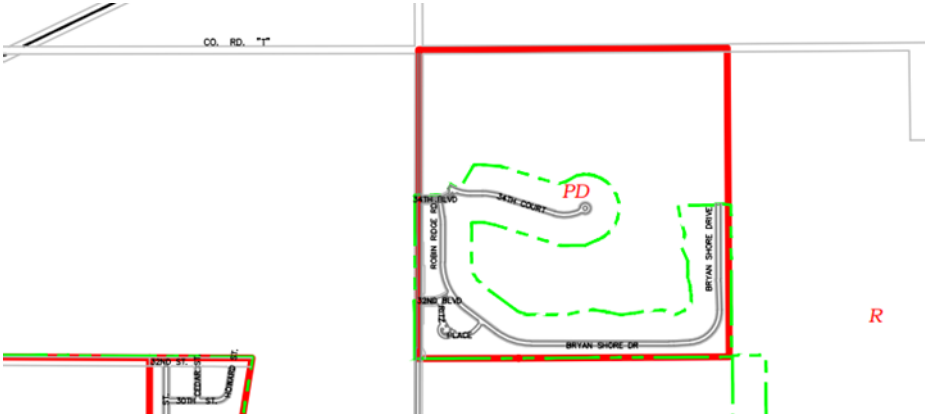
The proposed final plat is consistent with the approved Ritz Lake Planned Development and Preliminary Plat.

A subdivision agreement is not needed to adjust the lot lines.

Vicinity Map



Zoning Map







## Staff Report

**TO:** Planning Commission  
**FROM:** Jennifer L. Dam, AICP, Planning Director  
**DATE:** July 19, 2021  
**SUBJECT:** Fremont Technology Park Replat 3 Preliminary Plat

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**Recommendation:** Recommend Approval to City Council

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### Background:

This is a request for revisions to a preliminary plat expanding the number of lots in the Fremont Technology Park.

The City Council approved the Fremont Technology Park Preliminary Plat and the Fremont Technology Park final plat in October, 2013. The Fremont Technology Park Replat of Outlot A was approved in December, 2014. The Fremont Technology Park Replat of Outlot B, administrative plat was approved in April, 2020. The Fremont Technology Park 1<sup>st</sup> Addition Replat of Outlot B and Lot 2 and Lot 3, administrative plat, was approved in December 2020. The Fremont Technology Park 2<sup>nd</sup> Addition, administrative plat, was approved in March, 2021.

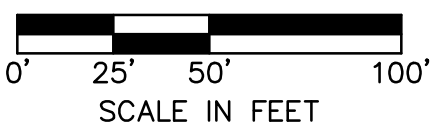
On April 19, 2021, the Planning Commission held a public hearing and recommended approval to the Fremont Technology Park 3<sup>rd</sup> Addition preliminary plat and final plat with a 9-0 vote.

On May 11, 2021 the City Council voted to have the five lots abutting Outlot A combined into Outlot A to accommodate drainage and to send the Preliminary and Final Plats back to the Planning Commission for their review.

On May 24, 2021, the revised Preliminary Plat and Final Plat with the lots on the east side of Buckingham Circle/Road included in Outlot A was reviewed by the Planning Commission. The recommended approval to the revised Preliminary Plat but requested additional drainage information for the final plat. The Planning Commission recommended to table the final plat until additional drainage information was brought forward.

The revised drainage study is attached. The preliminary plat has been revised to show a larger drainage basin. The outlot has increased 2.63 acres from 3.97 acres to 6.6 acres. The lot depths on the eastern edge adjacent to the drainage basin are now 200 feet instead of 287 feet.

~~EAST 32ND STREET~~



A TRACT OF LAND COMPOSED OF LOT OUTLOT "B" FREMONT TECHNOLOGY PARK 1ST ADDITION AND OUTLOT "A" FREMONT TECHNOLOGY PARK 2ND ADDITION, LOCATED IN THE SOUTHWEST AND SOUTEAST QUARTERS OF SECTION 12, TOWNSHIP 17 NORTH, RANGE 8 EAST OF THE 6TH P.M., DODGE COUNTY, NEBRASKA, AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

SOUTHWEST CORNER OF  
THE NORTH HALF OF  
THE SOUTHWEST QUARTER  
OF SECTION 12-T17N-R8E  
TND. PK NAIL

I HEREBY CERTIFY THAT I HAVE MADE A GROUND SURVEY OF THE SUBDIVISION DESCRIBED HEREIN AND THAT PERMANENT MONUMENTS HAVE BEEN PLACED AT ALL CORNERS OF LOTS, ANGLE POINTS AND ENDS OF CURVES IN FREMONT TECHNOLOGY PARK 3RD ADDITION, A SUBDIVISION LOCATED IN THE SOUTHWEST AND SOUTHEAST QUARTERS OF SECTION 12, TOWNSHIP 17 NORTH, RANGE 8 EAST OF THE 6TH P.M., CITY OF FREMONT, DODGE COUNTY, NEBRASKA.

## DEDICATION

BY: CITY OF FREMONT, DODGE COUNTY NEBRASKA

BY: \_\_\_\_\_

**ACKNOWLEDGMENT OF NOTARY**

STATE OF NEBRASKA }  
 } SS  
DODGE COUNTY }

ON THIS THIS \_\_\_\_\_ DAY OF \_\_\_\_\_,  
20\_\_, THE UNDERSIGNED, A NOTARY PUBLIC, PERSONALLY CAME  
JOEY SPELLERBERG, MAYOR, CITY OF FREMONT, DODGE COUNTY  
NEBRASKA.

\_\_\_\_\_  
NOTARY PUBLIC

THIS PLAT OF "FREMONT TECH PARK 3RD ADDITION" HAS BEEN SUBMITTED TO AND APPROVED BY THE CITY OF FREMONT PLANNING COMMISSION AND IS HEREBY TRANSMITTED TO THE CITY COUNCIL OF FREMONT, NEBRASKA, WITH THE RECOMMENDATION THAT THIS PLAT BE APPROVED AS PROPOSED.

DATED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_\_

CITY OF FREMONT PLANNING COMMISSION:

CHAIRPERSON

SECRETARY

FREMONT TECHNOLOGY PARK 3RD ADDITION  
PRELIMINARY PLAT

drawn by: \_\_\_\_\_ ALB  
checked by: \_\_\_\_\_  
approved by: \_\_\_\_\_  
QA/QC by: \_\_\_\_\_ DT  
project no.: \_\_\_\_\_ 018-1554  
drawing no.: \_\_\_\_\_  
date: \_\_\_\_\_ 7/14/2021

SHEET  
1 of 1

**Olsson**

601 P Street, Suite 200  
P.O. Box 84608  
Lincoln, NE 68508

58508

TEL 402.474.6311

[www.olsson.com](http://www.olsson.com)

DWG: F:\2018\1501-2000\018-1554\40-Design\Survey\SRVY\Final Plats\3rd Addition\Drawings\FP\_FTP\_3rd\_Addition preliminary plat.dwg  
DATE: Jul 15, 2021 10:05am XREFS: 2021.03.02\_GNCV\_Fremont Site Layout B130592\_ALTA USER: abroeker

Drawings\FP\_F-  
B130592\_ALTA



# **DRAINAGE REPORT**

**Prepared for:**

Fremont Technology Park

Fremont, NE

June 2021

Olsson Project No. 018-1554



# **TABLE OF CONTENTS**

- A. BASIC DATA**
- B. OVERALL WATERSHED**
- C. EXISTING SITE DATA**
- D. FACILITY DESIGN**
- E. DEVELOPED SITE DATA**
- F. FEMA ZONE A IMPACTS**

# **APPENDICES**

- A. DRAINAGE BASIN MAPS**
- B. HYDROCAD REPORT**

**A. BASIC DATA:**

These drainage calculations are based on the following data, and design criteria:

Site location

This drainage report was generated for the Fremont Technology Park, which is located east of N. Yager Road between the future E. 32<sup>nd</sup> Street to the north and Rawhide Creek to the south. The property is bounded on the east by a residential development along N. Laverna Street.

Site Area

The project site is a total of 80.4 acres and pre-development site conditions consists entirely of agricultural cropland.

Terrain and Pre-Development ground conditions

The site drains primarily from the west at elevation 1185.0 to the south east at elevation 1183.0. The property is split into two sub-basins (see Appendix A – Drainage Basin Maps). The first drains primarily to a shallow ditch running along the northern edge of the property. The second sub-basin drains to the Rawhide Creek channel, running along the southern edge of the property.

Pre-Development surrounding land uses

North: Agricultural cropland

South: Agricultural cropland; mixed use development

West: Agricultural cropland

East: Residential development

Methodology

The SCS method will be utilized for evaluating the pre-development runoff and post-development runoff to and from the dry detention basin. Runoff will be calculated and each basin will be sized using the HydroCAD program. 24-hour design rainfall for the City of Fremont is as follows:

<u>Frequency</u>	<u>24-hour rainfall</u>
2-year	3.0 in.
10-year	4.5 in.
100-year	6.7 in.

SOURCE: National Weather Service TP-40

**B. OVERALL WATERSHED**

The watershed of Rawhide Creek upstream of the site consists of approximately 25.13 mi<sup>2</sup>, although this drainage report only represents 80.4 acres of the entire watershed.

**C. PRE-DEVELOPMENT SITE DATA:**

The modeled portion of the subject property consists of two pre-development sub-basins. A drainage map of the pre-development sub-basins can be found in Appendix A (Exhibit 1). The pre-development property is open, undeveloped agricultural cropland. Two drainage channels border the site on the north and the south. The pre-development sub-basins are described as follows:

**Pre-Development North Sub-Basin**

The pre-development North Sub-Basin consists of the northern half of the subject property. It drains to the northeast, flowing into an unnamed drainage that runs along the north property line.

Area = 38.72 acres

Estimated Time of Concentration = 188 minutes

Existing Area of Impervious Surface = 0%

Curve Number, CN = 85 (Row Crops, Straight Row, Crop Residue, Hydrologic Soil Group D, Good Condition)

**Existing runoff rates for Existing North Sub-Basin:**

<u>Event</u>	<u>Peak Rate (cfs)</u>
2-year (3.0 inches)	13.72
10-year (4.5 inches)	25.41
100-year (6.7 inches)	43.15

**Pre-Development South Sub-Basin**

The pre-development South Sub-Basin consists of the southern half of the subject property. It drains to the southeast, toward the Rawhide Creek channel which runs along the south property line.

Area = 41.70 acres

Estimated Time of Concentration = 183 minutes

Existing Area of Impervious Surface = 0%

Curve Number, CN = 85 (Row Crops, Straight Row, Crop Residue, Hydrologic Soil Group D, Good Condition)

**Existing runoff rates for Pre-Development South Sub-Basin:**

<u>Event</u>	<u>Peak Rate (cfs)</u>
2-year (3.0 inches)	15.06
10-year (4.5 inches)	27.82
100-year (6.7 inches)	47.35

## D. FACILITY DESIGN

This subject property zoning of light industrial will likely consist of office, commercial and industrial type uses with associated green space, sidewalks and parking areas.

The City of Fremont Municipal Code, Chapter 11 Unified Development Code, Article 5 Land Uses, the following uses would be permitted, limited or conditional uses (not all listed) in "Light Industrial" zoning:

### Recreation Uses

- Civic Club/Private Club
- Public Assembly
- Health Club
- Indoor Recreation
- Outdoor Commercial Amusement
- Outdoor Recreation
- Park

### Commercial Uses

- Animal Grooming Facilities / Veterinary Services
- Auto Sales and Service Establishments
- Financial Institution
- Office
- Restaurant
- Retail Sales/Service
- Hotels

### Agriculture, Industrial, Utility, Transportation, and Communication Uses

- Agricultural Sales and Service
- Nursery
- Equipment Rental, Sales and Service
- Home Improvement Center/Lumberyard
- Recycling Facility
- Self-Service Storage Facility
- Storage Yard
- Warehouse
- Large / Medium / Small Utility Services
- Communication Services

One dry detention basin is proposed on-site to collect runoff from the site. The detention basin was designed to detain a 10-year storm event, and result in "no net increase" in the 2-year storm event. A storm sewer pipe will connect from the basin to the existing Rawhide Creek channel.

## E. DEVELOPED SITE DATA

The post-development drainage condition consists of three drainage sub-basins. All three of the sub-basins will be impacted by the development. The uses identified in the Facility Design section were used for the post-development conditions pertaining to impervious areas and runoff calculations. Maps for the post-development drainage areas can be found in Appendix A (Exhibit 2). HydroCAD reports for the proposed dry detention basins can be found in Appendix B.

The post-development sub-basins are described as follows:

#### **Post-Development North Sub-Basin**

The post-development North Sub-Basin is almost entirely composed of pre-development North Sub-Basin, consisting of grassed slopes, roadways, parking lots, and the rooftops of the proposed buildings. The stormwater runoff from this basin will collect in the proposed detention, prior to discharging North.

Area = 38.11 acres

Estimated Time of Concentration = 126.6 minutes

Composite Curve Number, CN = 94

35.11 acres of CN = 95 (Commercial and business, 85% Imp HSG D)  
3.00 acres of CN = 80 (Grass Cover, >75% HSG D)

#### **Flow Rate Summary for Post-Development North Sub-basin:**

<u>Event</u>	<u>Dev. Peak Rate (cfs)</u>
2-year (3.0 inches)	27.00
10-year (4.5 inches)	43.13
100-year (6.7 inches)	66.52

#### **Post-Development South Sub-Basin A**

Post-Development South Sub-Basin B is composed of a portion of Pre-Development South Sub-Basin, consisting of grassed slopes, roadways, parking lots, and the rooftops of the proposed buildings. The stormwater runoff from this basin flows directly into Rawhide Creek.

Area = 14.25 acres

Estimated Time of Concentration = 91.5 minutes

Composite Curve Number, CN = 94

13.00 acres of CN = 95 (Commercial and business, 85% Imp HSG D)  
1.25 acres of CN = 80 (Grass Cover, >75% HSG D)

#### **Flow Rate Summary for Post-Development South Sub-Basin A:**

<u>Event</u>	<u>Dev. Peak Rate (cfs)</u>
2-year (3.0 inches)	12.90
10-year (4.5 inches)	20.57
100-year (6.7 inches)	31.69

**Post-Development South Sub-Basin B**

Post-Development South Sub-Basin A is composed of a portion of the Pre-Development South Sub-Basin, consisting of grassed slopes, a dry detention pond, roadways, parking lots, and the rooftops of the proposed buildings. The stormwater runoff from this basin will collect in the proposed detention, prior to discharging into Rawhide Creek.

Area = 27.98 acres

Estimated Time of Concentration = 102.8 minutes

Composite Curve Number, CN = 93

24.28 acres of CN = 95 (Commercial and business, 85% Imp HSG D)  
3.70 acres of CN = 80 (Grass Cover, >75% HSG D)

**Flow Rate Summary for Post-Development South Sub-Basin B:**

Event	Dev. Peak Rate (cfs)
2-year (3.0 inches)	22.32
10-year (4.5 inches)	36.16
100-year (6.7 inches)	56.24

**Runoff Summary Table**

Drainage Sub-Basins	Pre-Development Runoff 2-year (cfs)	Post-Development Runoff 2-year (cfs)	Pre-Development Runoff 10-year (cfs)	Post-Development Runoff 10-year (cfs)	Pre-Development Runoff 100-year (cfs)	Post-Development Runoff 100-year (cfs)
North	13.72	13.30	26.18	25.46	43.15	43.19
<b>Total</b>	<b>13.72</b>	<b>13.30</b>	<b>26.18</b>	<b>25.46</b>	<b>43.15</b>	<b>43.19</b>
South	15.06		27.82		47.35	
South A		6.92		13.47		30.41
South B		12.90		20.57		31.69
<b>Total</b>	<b>15.06</b>	<b>15.01</b>	<b>27.82</b>	<b>26.46</b>	<b>47.35</b>	<b>48.85</b>

**Proposed Dry Detention Basin North**

The proposed North Dry Detention Basin is along the North side of the site (see Exhibit 2 in Appendix A). The primary outlet for the proposed Dry Detention Basin consists of a 36-inch diameter pipe, approximately 100 feet long, with an invert elevation at 1177.95. The pipe should outlet at elevation 1177.45. In addition, a 3' X 3' box structure shall be built up to 1180.50 with a 21" orifice or equivalent at 1177.95. The total storage volume of the proposed detention is 5.52 acre feet. See Appendix B for the complete HydroCAD report.

**Proposed Dry Detention Basin South**

The proposed North Dry Detention Basin is along the South and East side of the site (see Exhibit 2 in Appendix A). The primary outlet for the proposed Dry Detention Basin consists of a 24-inch diameter pipe, approximately 100 feet long, with an invert elevation at 1177.95. The pipe should outlet in the Rawhide Creek channel at elevation 1177.45. In addition, a 3' X 3' box structure shall be built up to 1182.45 with a 8" orifice or equivalent at 1177.95 and a 1' notch from 1180.00 to the top. The total storage volume of the proposed detention is 5.54 acre feet. See Appendix B for the complete HydroCAD report.

**Discharge Summary Table**

Location	Post-Development Discharge 2-year (cfs)	Post-Development Discharge 10-year (cfs)	Post-Development Discharge 100-year (cfs)
Dry Detention N	13.30	26.18	43.19
Dry Detention S	6.92	13.47	30.41

**Pre and Post Discharge Summary Table**

Drainage Sub- Basins	Pre- Development Runoff 2-year (cfs)	Post- Development Runoff 2-year (cfs)	Pre- Development Runoff 10- year (cfs)	Post- Development Runoff 10- year (cfs)	Pre- Development Runoff 100- year (cfs)	Post- Development Runoff 100-year (cfs)
North	13.72	13.30	25.41	26.18	43.15	43.19
South	15.06	15.04	27.82	26.46	47.35	48.85



## F. FEMA ZONE A IMPACTS

Under post-construction conditions, all drainage from the Fremont Technology Park site will ultimately drain to Rawhide Creek, running along the southern boundary of the development. This portion of Rawhide Creek is a FEMA designated Zone A, areas inundated by the 1% annual chance flood (100-year flood), no base flood elevations determined.

A hydraulic analysis was completed to evaluate the impact of the development of the Fremont Technology Park on Rawhide Creek base flood elevations. Because FEMA has not designated a base flood elevation for the site, it was necessary to identify the current base flood elevation. Utilizing available survey data and the extents of the FEMA designated Rawhide Creek Zone A, a base flood discharge of 1000 cfs within the channel was determined, with a base flood elevation of 1183.91 at the eastern edge of the project limits. Based on the drainage analysis completed for the Fremont Technology Park, the 100-year peak discharge from the site could increase by as much as 39 cfs.

Using HEC-RAS, the channel of Rawhide Creek was modeled to evaluate the impact of this increase in runoff from the Fremont Technology Park site. According to HEC-RAS, an increase from 1000 cfs to 1039 cfs in the Rawhide Creek channel will result in a 0.10-foot rise in the 1% annual chance flood elevation, from the current BFE of 1183.91 to a future condition BFE of 1184.01. This rise in elevation meets FEMA's requirement of limiting any rise in a Zone A to less than 1.0 feet.

Proposed building floor elevations should be reasonably raised 2 to 3 feet above elevation 1184.0 to account for freeboard and the potential of flood events which exceed the 100-year frequency.

In order to keep Zone A impacts minimal, and to protect any development occurring at the Fremont Technology Park site, grading should be limited around the Rawhide Creek channel. A buffer area extending from the flow line of the channel up at a 3:1 slope to the top of bank elevations, plus an additional 20 feet should be observed. This represents a 45 to 50 foot wide buffer area north of the stream channel. It is recommended that no structures or grading occur within this buffer area.

# **APPENDIX A – DRAINAGE BASIN MAPS**

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- 1195 --- EXISTING MAJOR CONTOUR
- 1195 --- EXISTING MINOR CONTOUR
- EXISTING DRAINAGE BOUNDARY
- PROPERTY LINE

X  
X.XX AC.  
CN=XX

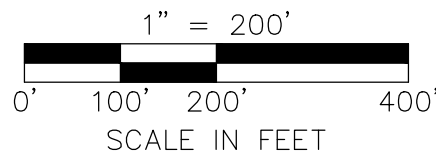
DRAINAGE ID  
DRAINAGE AREA  
CURVE NUMBER

EXISTING DRAINAGE DITCH

NORTH SUB-BASIN  
38.7 AC.  
CN=85

SOUTH SUB-BASIN  
41.7 AC.  
CN=85

LIMITS OF FLOOD ZONE A



NORTH YAGER STREET

27TH STREET

PROJECT NO: 018-15540

DRAWN BY: MRG

DATE: 04/06/2021

## PRE DEVELOPMENT DRAINAGE EXHIBIT

**olsson**

601 P Street, Suite 200  
P.O. Box 84608  
Lincoln, NE 68508  
TEL 402.474.6311

EXHIBIT

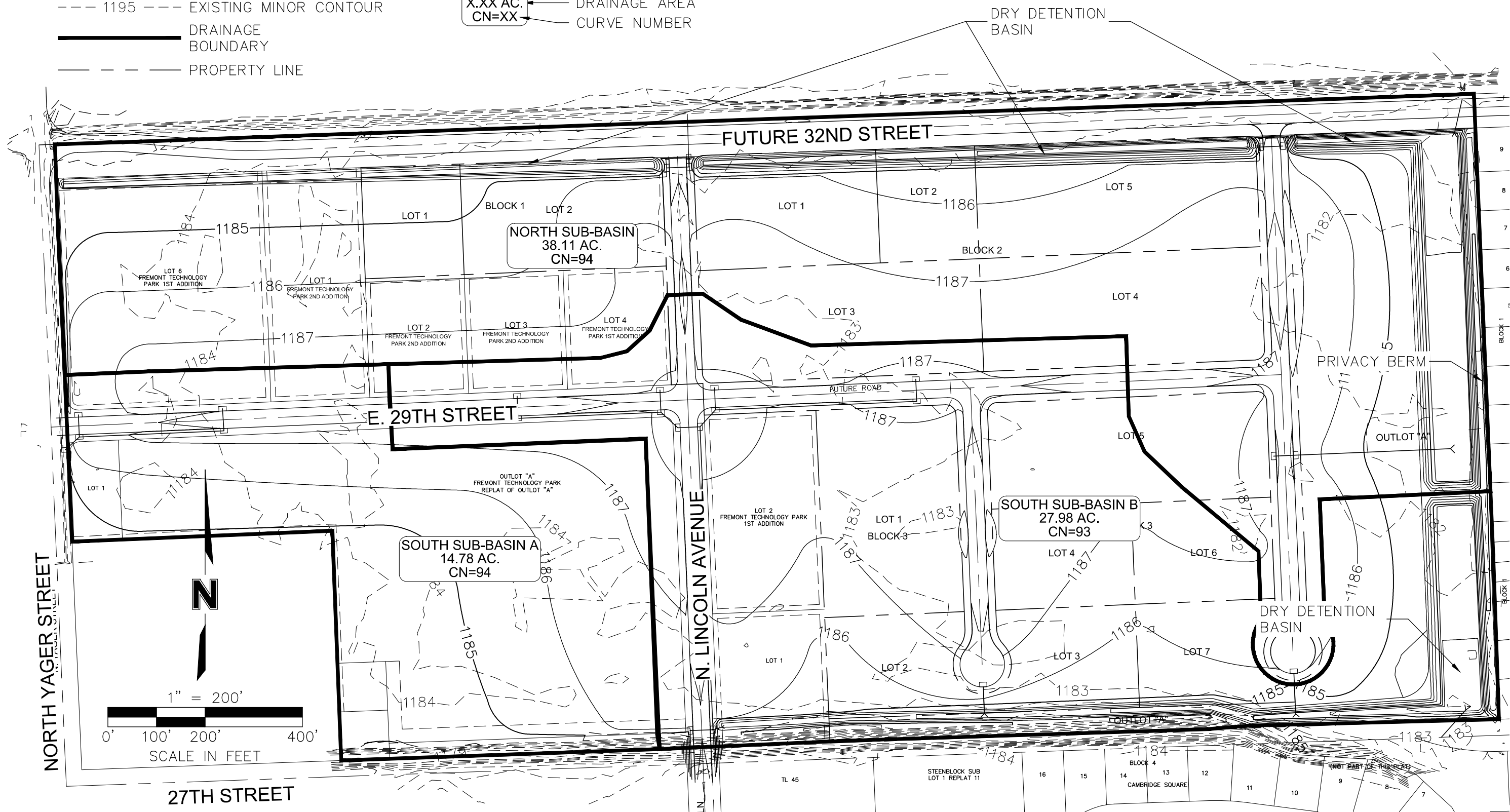
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- 1195 PROPOSED MAJOR CONTOUR
- 1195 PROPOSED MINOR CONTOUR
- 1195 EXISTING MAJOR CONTOUR
- 1195 EXISTING MINOR CONTOUR
- DRAINAGE BOUNDARY
- PROPERTY LINE

X  
X.XX AC.  
CN=XX

DRAINAGE ID  
DRAINAGE AREA  
CURVE NUMBER



PROJECT NO: 018-15540

DRAWN BY: MRG

DATE: 06/28/21

## POST DEVELOPMENT DRAINAGE EXHIBIT

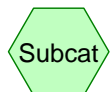
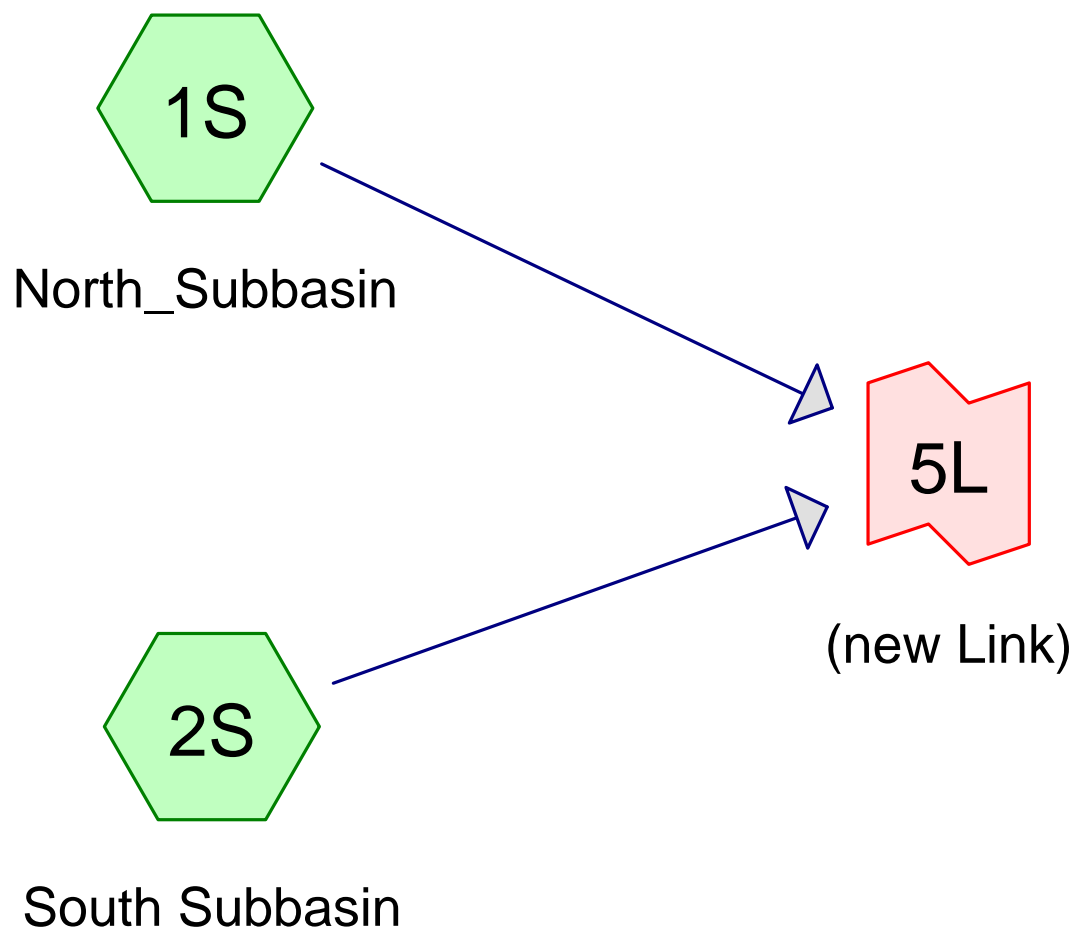
**olsson**

601 P Street, Suite 200  
P.O. Box 84608  
Lincoln, NE 68508  
TEL 402.474.6311

EXHIBIT

1

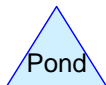
# **APPENDIX B – HYDROCAD REPORT**



Subcat



Reach



Pond



Link

#### Routing Diagram for Existing

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---

### Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
38.720	85	SR+CR, Good Condition (1S)
41.700	85	Soil Group D, SR+CR Good (2S)
<b>80.420</b>	<b>85</b>	<b>TOTAL AREA</b>

## Existing

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---

### Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
80.420	Other	1S, 2S
<b>80.420</b>		<b>TOTAL AREA</b>



## Existing

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---

### Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.000	38.720	38.720	SR+CR, Good Condition	1S
0.000	0.000	0.000	0.000	41.700	41.700	Soil Group D, SR+CR Good	2S
<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>80.420</b>	<b>80.420</b>	<b>TOTAL AREA</b>	

**Existing***Type II 24-hr 2 yr event Rainfall=3.00"*Prepared by HydroCAD SAMPLER 1-800-927-7246 [www.hydrocad.net](http://www.hydrocad.net)

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---

Time span=1.00-30.00 hrs, dt=0.10 hrs, 291 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: North Subbasin**

Runoff Area=38.720 ac 0.00% Impervious Runoff Depth>1.59"  
Flow Length=3,088' Tc=187.8 min CN=85 Runoff=13.72 cfs 5.121 af

**Subcatchment 2S: South Subbasin**

Runoff Area=41.700 ac 0.00% Impervious Runoff Depth>1.59"  
Flow Length=2,992' Tc=182.7 min CN=85 Runoff=15.06 cfs 5.516 af

**Link 5L: (new Link)**

Inflow=28.78 cfs 10.637 af  
Primary=28.78 cfs 10.637 af

**Total Runoff Area = 80.420 ac Runoff Volume = 10.637 af Average Runoff Depth = 1.59"**  
**100.00% Pervious = 80.420 ac 0.00% Impervious = 0.000 ac**

## Existing

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### Summary for Subcatchment 1S: North\_Subbasin

Runoff = 13.72 cfs @ 14.38 hrs, Volume= 5.121 af, Depth> 1.59"

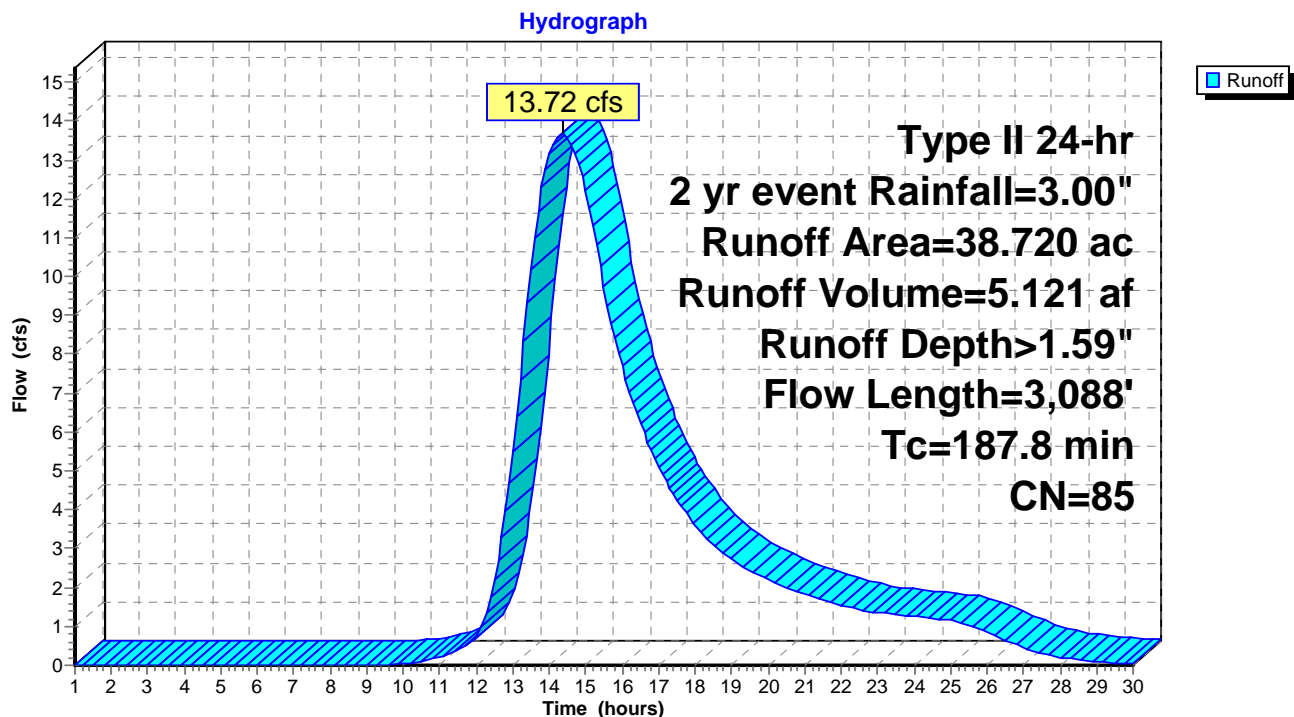
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.10 hrs  
Type II 24-hr 2 yr event Rainfall=3.00"

Area (ac)	CN	Description
* 38.720	85	SR+CR, Good Condition
38.720		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
38.8	300	0.0010	0.13		<b>Sheet Flow,</b> Cultivated: Residue<=20% n= 0.060 P2= 3.00"
149.0	2,788	0.0012	0.31		<b>Shallow Concentrated Flow,</b> Cultivated Straight Rows Kv= 9.0 fps
187.8	3,088	Total			

### Subcatchment 1S: North\_Subbasin



## Existing

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Type II 24-hr 2 yr event Rainfall=3.00"

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### Summary for Subcatchment 2S: South Subbasin

Runoff = 15.06 cfs @ 14.36 hrs, Volume= 5.516 af, Depth> 1.59"

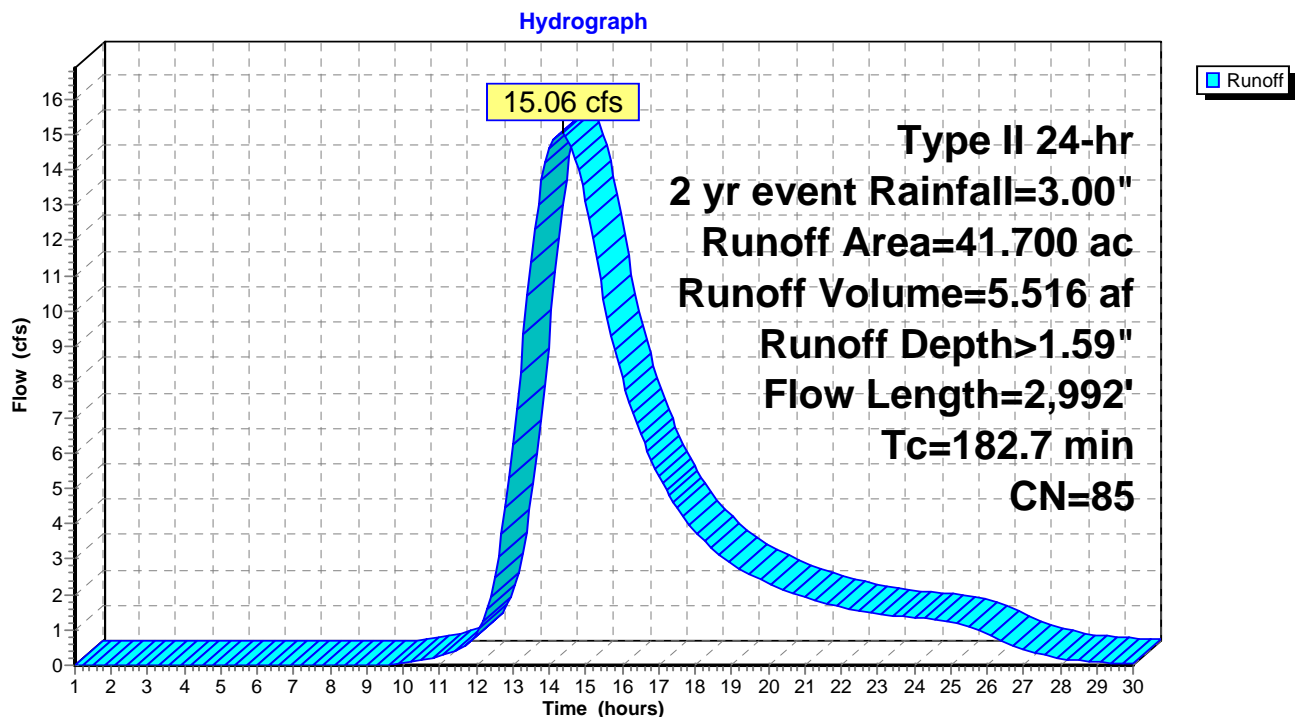
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.10 hrs  
Type II 24-hr 2 yr event Rainfall=3.00"

Area (ac)	CN	Description
* 41.700	85	Soil Group D, SR+CR Good
41.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
38.8	300	0.0010	0.13		<b>Sheet Flow,</b> Cultivated: Residue<=20% n= 0.060 P2= 3.00"
143.9	2,692	0.0012	0.31		<b>Shallow Concentrated Flow,</b> Cultivated Straight Rows Kv= 9.0 fps
182.7	2,992	Total			

### Subcatchment 2S: South Subbasin



## Existing

Type II 24-hr 2 yr event Rainfall=3.00"

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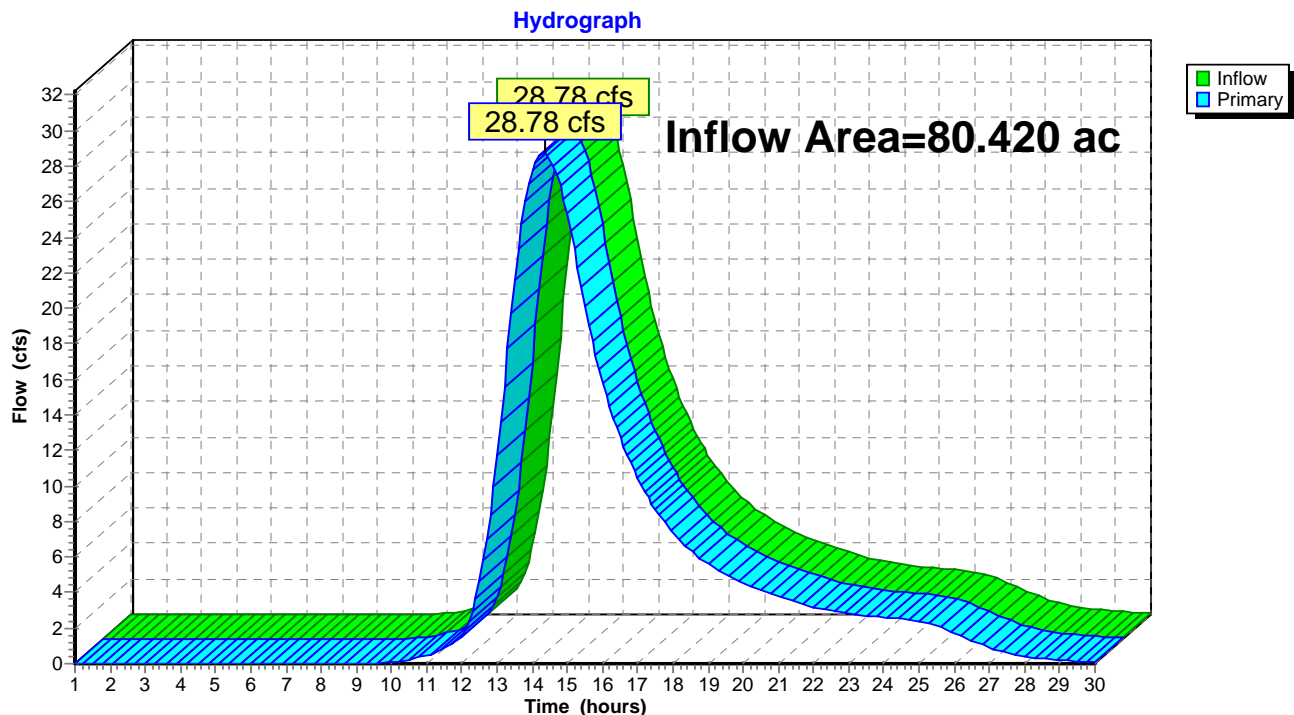
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### Summary for Link 5L: (new Link)

Inflow Area = 80.420 ac, 0.00% Impervious, Inflow Depth > 1.59" for 2 yr event event  
Inflow = 28.78 cfs @ 14.37 hrs, Volume= 10.637 af  
Primary = 28.78 cfs @ 14.37 hrs, Volume= 10.637 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-30.00 hrs, dt= 0.10 hrs

### Link 5L: (new Link)



**Existing***Type II 24-hr 10 yr event Rainfall=4.50"*Prepared by HydroCAD SAMPLER 1-800-927-7246 [www.hydrocad.net](http://www.hydrocad.net)

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Time span=1.00-30.00 hrs, dt=0.10 hrs, 291 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: North Subbasin**

Runoff Area=38.720 ac 0.00% Impervious Runoff Depth>2.91"  
Flow Length=3,088' Tc=187.8 min CN=85 Runoff=25.41 cfs 9.381 af

**Subcatchment 2S: South Subbasin**

Runoff Area=41.700 ac 0.00% Impervious Runoff Depth>2.91"  
Flow Length=2,992' Tc=182.7 min CN=85 Runoff=27.82 cfs 10.104 af

**Link 5L: (new Link)**

Inflow=53.18 cfs 19.485 af  
Primary=53.18 cfs 19.485 af

**Total Runoff Area = 80.420 ac Runoff Volume = 19.485 af Average Runoff Depth = 2.91"**  
**100.00% Pervious = 80.420 ac 0.00% Impervious = 0.000 ac**

## Existing

Type II 24-hr 10 yr event Rainfall=4.50"

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### Summary for Subcatchment 1S: North\_Subbasin

Runoff = 25.41 cfs @ 14.35 hrs, Volume= 9.381 af, Depth> 2.91"

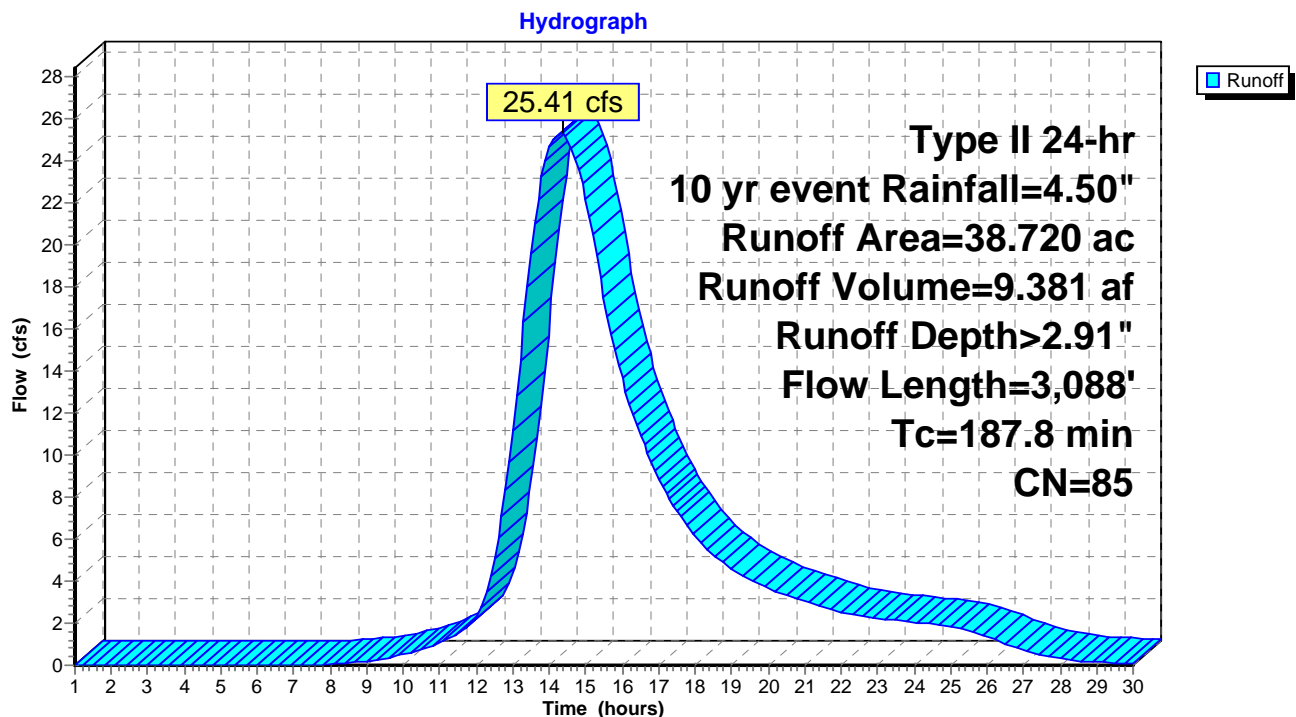
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.10 hrs  
Type II 24-hr 10 yr event Rainfall=4.50"

Area (ac)	CN	Description
* 38.720	85	SR+CR, Good Condition
38.720		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
38.8	300	0.0010	0.13		<b>Sheet Flow,</b> Cultivated: Residue<=20% n= 0.060 P2= 3.00"
149.0	2,788	0.0012	0.31		<b>Shallow Concentrated Flow,</b> Cultivated Straight Rows Kv= 9.0 fps
187.8	3,088	Total			

### Subcatchment 1S: North\_Subbasin



## Existing

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Type II 24-hr 10 yr event Rainfall=4.50"

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### Summary for Subcatchment 2S: South Subbasin

Runoff = 27.82 cfs @ 14.26 hrs, Volume= 10.104 af, Depth> 2.91"

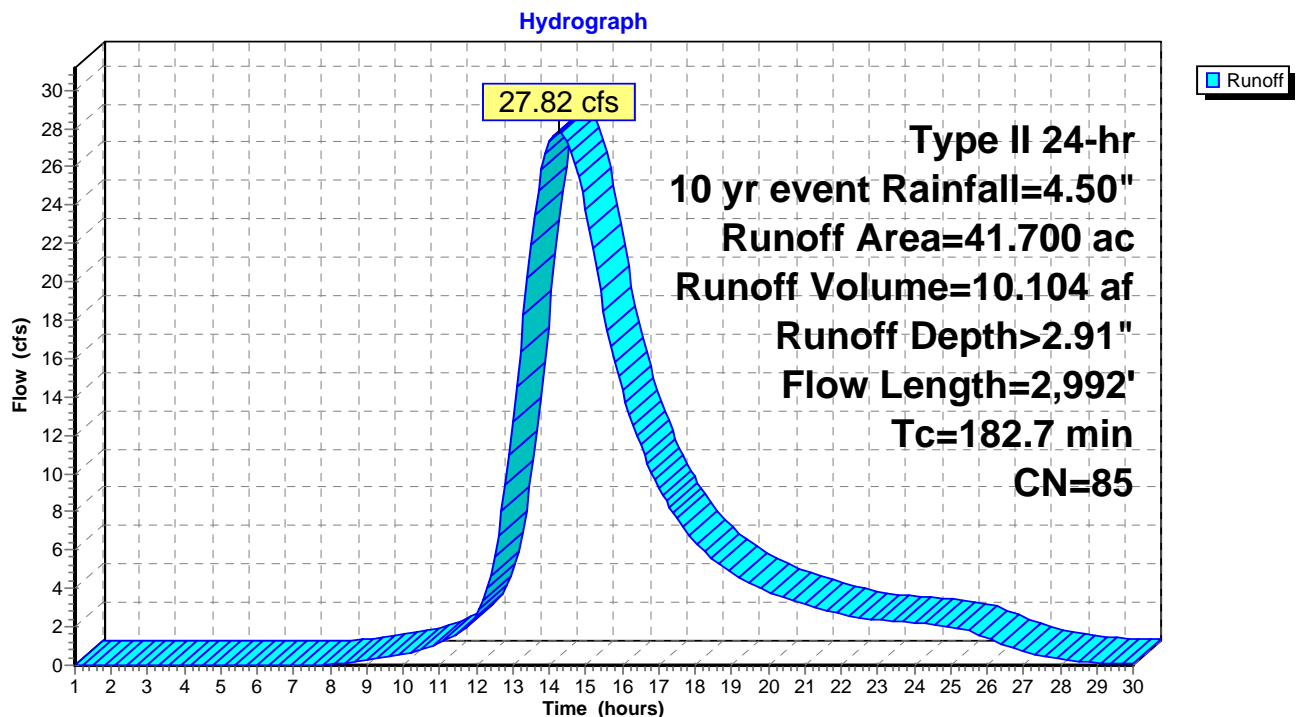
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.10 hrs  
Type II 24-hr 10 yr event Rainfall=4.50"

Area (ac)	CN	Description
* 41.700	85	Soil Group D, SR+CR Good
41.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
38.8	300	0.0010	0.13		<b>Sheet Flow,</b> Cultivated: Residue<=20% n= 0.060 P2= 3.00"
143.9	2,692	0.0012	0.31		<b>Shallow Concentrated Flow,</b> Cultivated Straight Rows Kv= 9.0 fps
182.7	2,992	Total			

### Subcatchment 2S: South Subbasin





## Existing

Type II 24-hr 10 yr event Rainfall=4.50"

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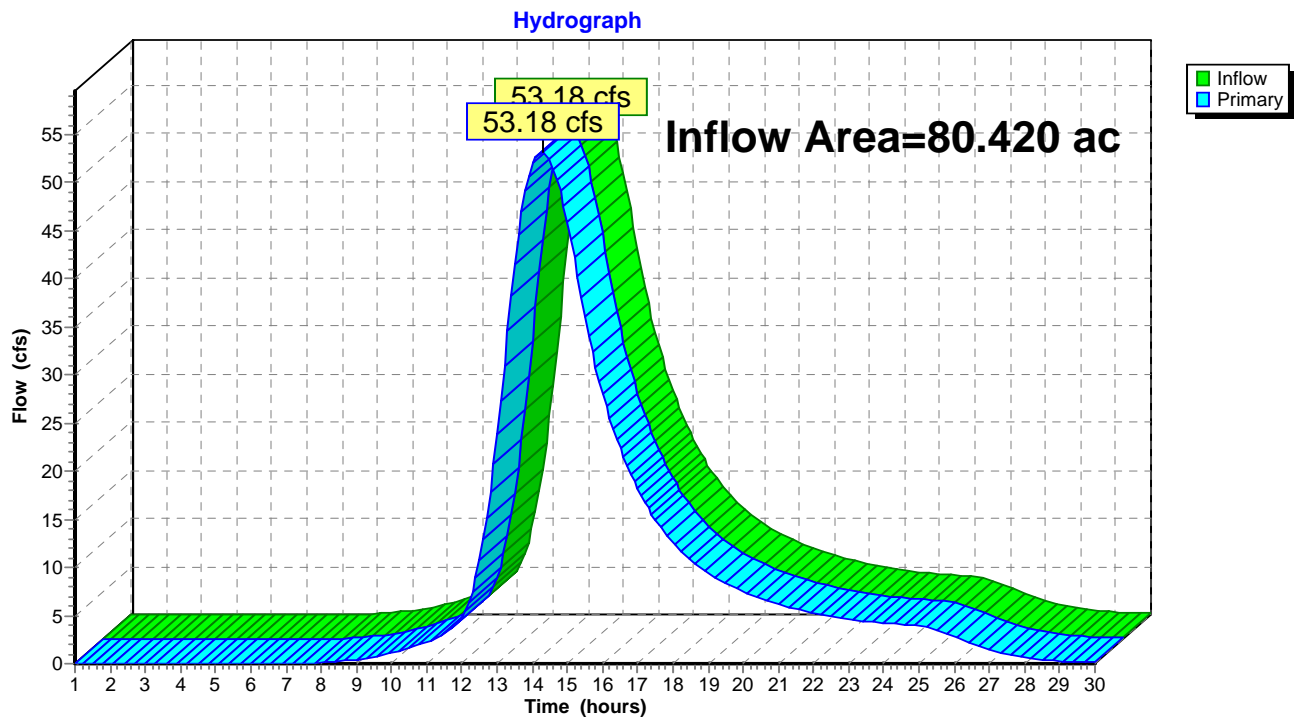
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### Summary for Link 5L: (new Link)

Inflow Area = 80.420 ac, 0.00% Impervious, Inflow Depth > 2.91" for 10 yr event event  
Inflow = 53.18 cfs @ 14.31 hrs, Volume= 19.485 af  
Primary = 53.18 cfs @ 14.31 hrs, Volume= 19.485 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-30.00 hrs, dt= 0.10 hrs

### Link 5L: (new Link)



**Existing***Type II 24-hr 100 yr event Rainfall=6.70"*Prepared by HydroCAD SAMPLER 1-800-927-7246 [www.hydrocad.net](http://www.hydrocad.net)

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Time span=1.00-30.00 hrs, dt=0.10 hrs, 291 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: North\_Subbasin**      Runoff Area=38.720 ac   0.00% Impervious   Runoff Depth>4.96"  
Flow Length=3,088'   Tc=187.8 min   CN=85   Runoff=43.15 cfs   16.015 af

**Subcatchment 2S: South Subbasin**      Runoff Area=41.700 ac   0.00% Impervious   Runoff Depth>4.96"  
Flow Length=2,992'   Tc=182.7 min   CN=85   Runoff=47.35 cfs   17.250 af

**Link 5L: (new Link)**      Inflow=90.49 cfs   33.265 af  
Primary=90.49 cfs   33.265 af

**Total Runoff Area = 80.420 ac   Runoff Volume = 33.265 af   Average Runoff Depth = 4.96"**  
**100.00% Pervious = 80.420 ac   0.00% Impervious = 0.000 ac**

## Existing

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Type II 24-hr 100 yr event Rainfall=6.70"

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### Summary for Subcatchment 1S: North\_Subbasin

Runoff = 43.15 cfs @ 14.29 hrs, Volume= 16.015 af, Depth> 4.96"

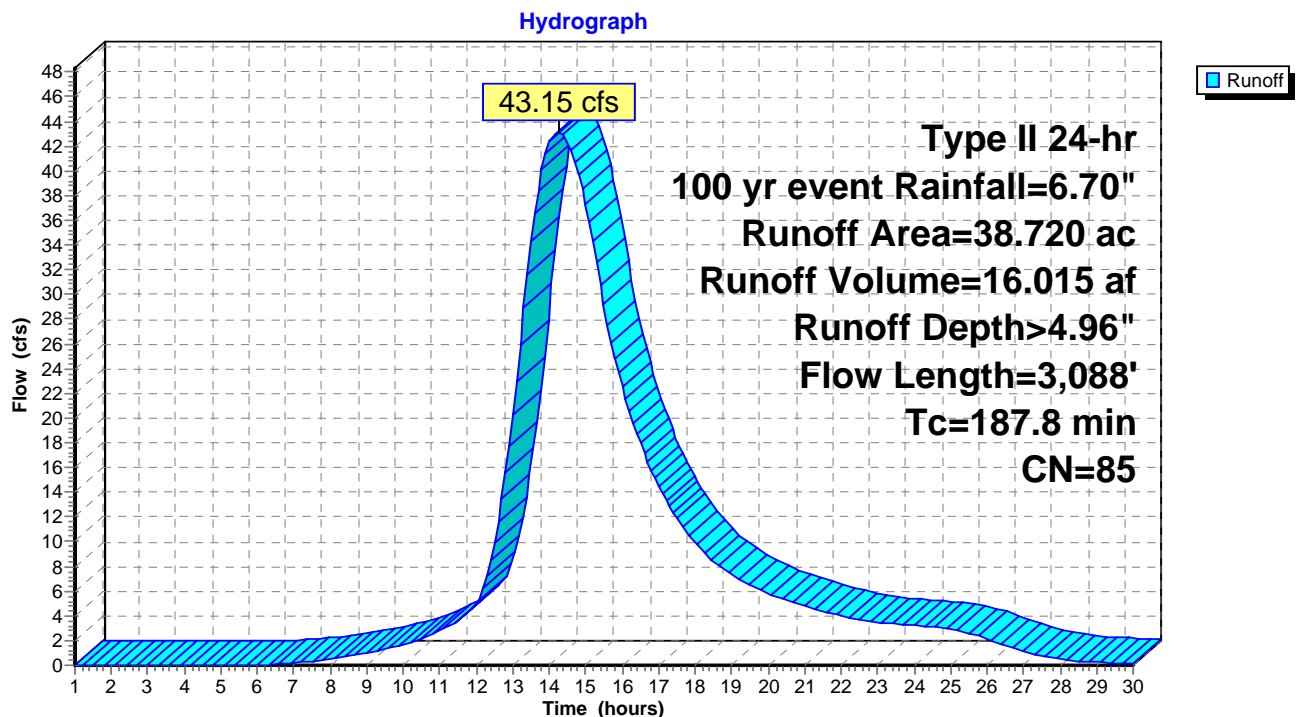
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.10 hrs  
Type II 24-hr 100 yr event Rainfall=6.70"

Area (ac)	CN	Description
* 38.720	85	SR+CR, Good Condition
38.720		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
38.8	300	0.0010	0.13		<b>Sheet Flow,</b> Cultivated: Residue<=20% n= 0.060 P2= 3.00"
149.0	2,788	0.0012	0.31		<b>Shallow Concentrated Flow,</b> Cultivated Straight Rows Kv= 9.0 fps
187.8	3,088	Total			

### Subcatchment 1S: North\_Subbasin



## Existing

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Type II 24-hr 100 yr event Rainfall=6.70"

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### Summary for Subcatchment 2S: South Subbasin

Runoff = 47.35 cfs @ 14.21 hrs, Volume= 17.250 af, Depth> 4.96"

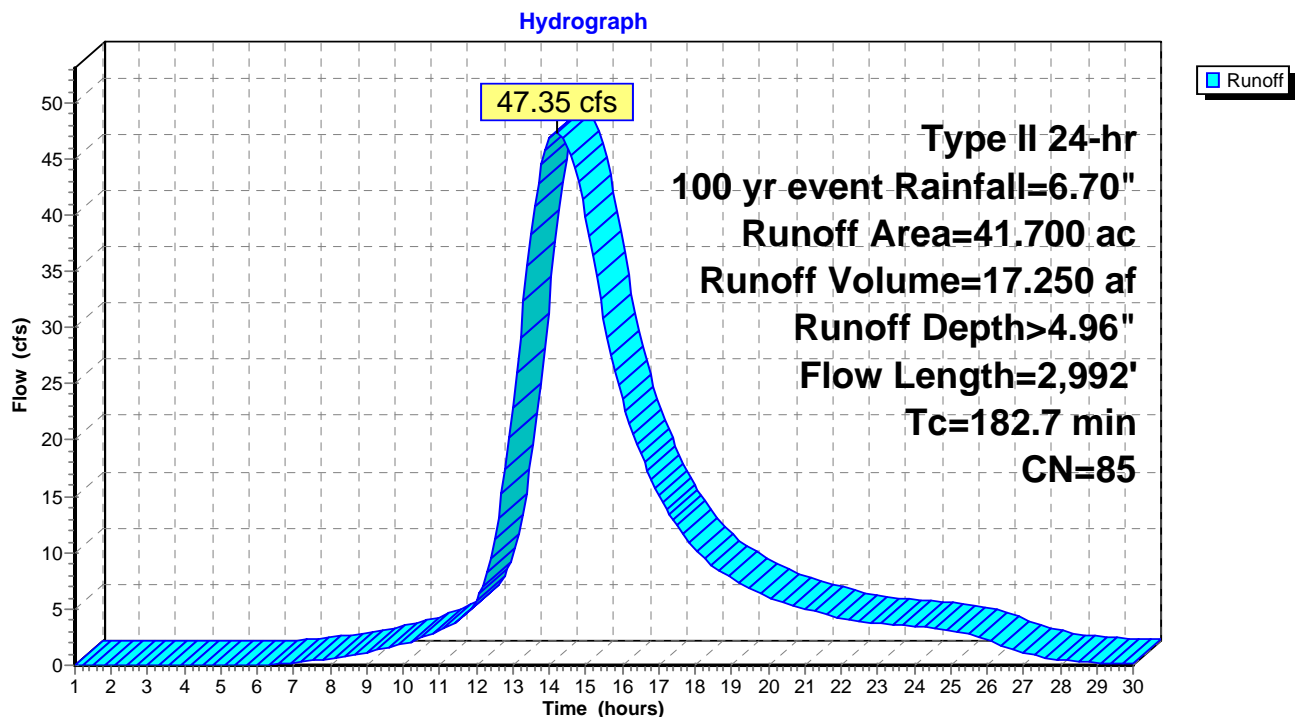
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.10 hrs  
Type II 24-hr 100 yr event Rainfall=6.70"

Area (ac)	CN	Description
* 41.700	85	Soil Group D, SR+CR Good
41.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
38.8	300	0.0010	0.13		<b>Sheet Flow,</b> Cultivated: Residue<=20% n= 0.060 P2= 3.00"
143.9	2,692	0.0012	0.31		<b>Shallow Concentrated Flow,</b> Cultivated Straight Rows Kv= 9.0 fps
182.7	2,992	Total			

### Subcatchment 2S: South Subbasin



## Existing

Type II 24-hr 100 yr event Rainfall=6.70"

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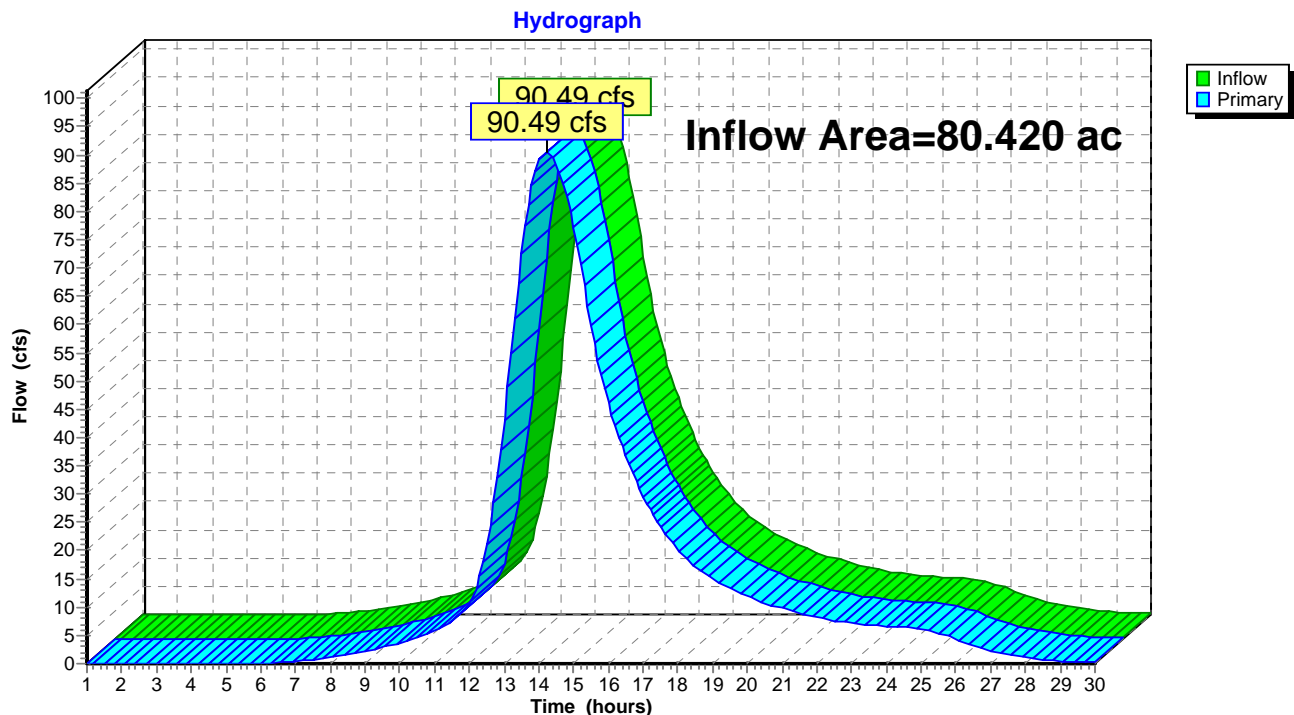
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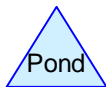
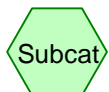
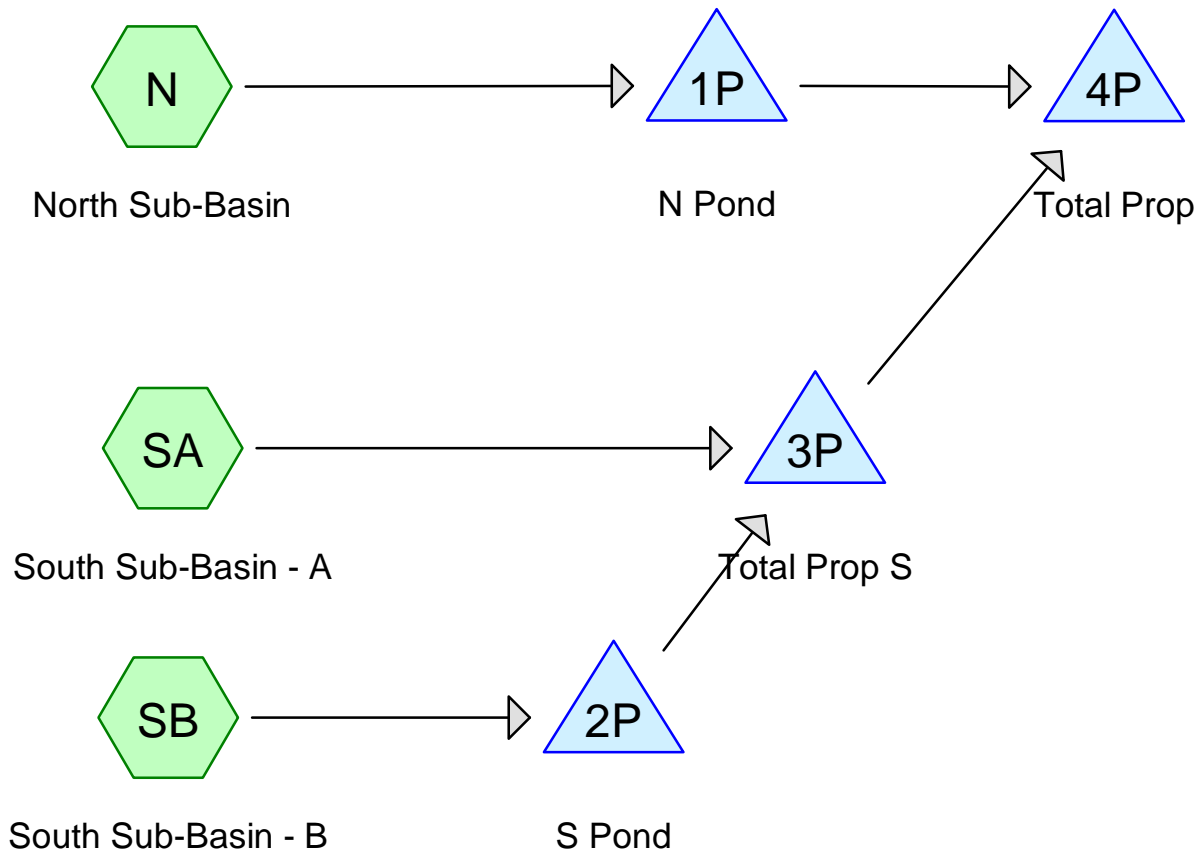
### Summary for Link 5L: (new Link)

Inflow Area = 80.420 ac, 0.00% Impervious, Inflow Depth > 4.96" for 100 yr event event  
Inflow = 90.49 cfs @ 14.24 hrs, Volume= 33.265 af  
Primary = 90.49 cfs @ 14.24 hrs, Volume= 33.265 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-30.00 hrs, dt= 0.10 hrs

### Link 5L: (new Link)





**Routing Diagram for Freemont Tech Park - Proposed 100 yr Equal Flows**  
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## Freemont Tech Park - Proposed\_100 yr\_Equal Flows

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### Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
7.950	80	>75% Grass cover, Good, HSG D (N, SA, SB)
72.390	95	Urban commercial, 85% imp, HSG D (N, SA, SB)
<b>80.340</b>	<b>94</b>	<b>TOTAL AREA</b>

## Freemont Tech Park - Proposed\_100 yr\_Equal Flows

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### Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
80.340	HSG D	N, SA, SB
0.000	Other	
<b>80.340</b>		<b>TOTAL AREA</b>



## Freemont Tech Park - Proposed\_100 yr\_Equal Flows

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### Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	7.950	0.000	7.950	>75% Grass cover, Good	N, SA, SB
0.000	0.000	0.000	72.390	0.000	72.390	Urban commercial, 85% imp	N, SA, SB
<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>80.340</b>	<b>0.000</b>	<b>80.340</b>	<b>TOTAL AREA</b>	

## Freemont Tech Park - Proposed\_100 yr\_Equal Flows

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### Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	1P	1,177.95	1,177.45	100.0	0.0050	0.013	36.0	0.0	0.0
2	2P	1,177.95	1,176.95	100.0	0.0100	0.013	24.0	0.0	0.0

# Freemont Tech Park - Proposed\_100 yr\_Equal Flows    *Type II 24-hr 2 yr event Rainfall=3.00"*

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Time span=1.00-30.00 hrs, dt=0.10 hrs, 291 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment N: North Sub-Basin**      Runoff Area=38.110 ac    78.31% Impervious    Runoff Depth>2.35"  
Flow Length=3,300'    Tc=126.6 min    CN=94    Runoff=27.00 cfs    7.463 af

**Subcatchment SA: South Sub-Basin - A**      Runoff Area=14.250 ac    77.54% Impervious    Runoff Depth=2.35"  
Flow Length=1,950'    Tc=91.5 min    CN=94    Runoff=12.90 cfs    2.791 af

**Subcatchment SB: South Sub-Basin - B**      Runoff Area=27.980 ac    73.76% Impervious    Runoff Depth=2.25"  
Flow Length=2,200'    Tc=102.8 min    CN=93    Runoff=22.32 cfs    5.256 af

**Pond 1P: N Pond**      Peak Elev=1,180.14'    Storage=109,455 cf    Inflow=27.00 cfs    7.463 af  
Outflow=13.30 cfs    7.384 af

**Pond 2P: S Pond**      Peak Elev=1,181.15'    Storage=112,467 cf    Inflow=22.32 cfs    5.256 af  
Outflow=6.92 cfs    4.841 af

**Pond 3P: Total Prop S**      Inflow=15.04 cfs    7.632 af  
Primary=15.04 cfs    7.632 af

**Pond 4P: Total Prop**      Inflow=24.64 cfs    15.015 af  
Primary=24.64 cfs    15.015 af

**Total Runoff Area = 80.340 ac    Runoff Volume = 15.510 af    Average Runoff Depth = 2.32"**  
**23.41% Pervious = 18.808 ac    76.59% Impervious = 61.532 ac**

# Freemont Tech Park - Proposed\_100 yr\_Equal Flows

Type II 24-hr 2 yr event Rainfall=3.00"

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## Summary for Subcatchment N: North Sub-Basin

Runoff = 27.00 cfs @ 13.45 hrs, Volume= 7.463 af, Depth> 2.35"

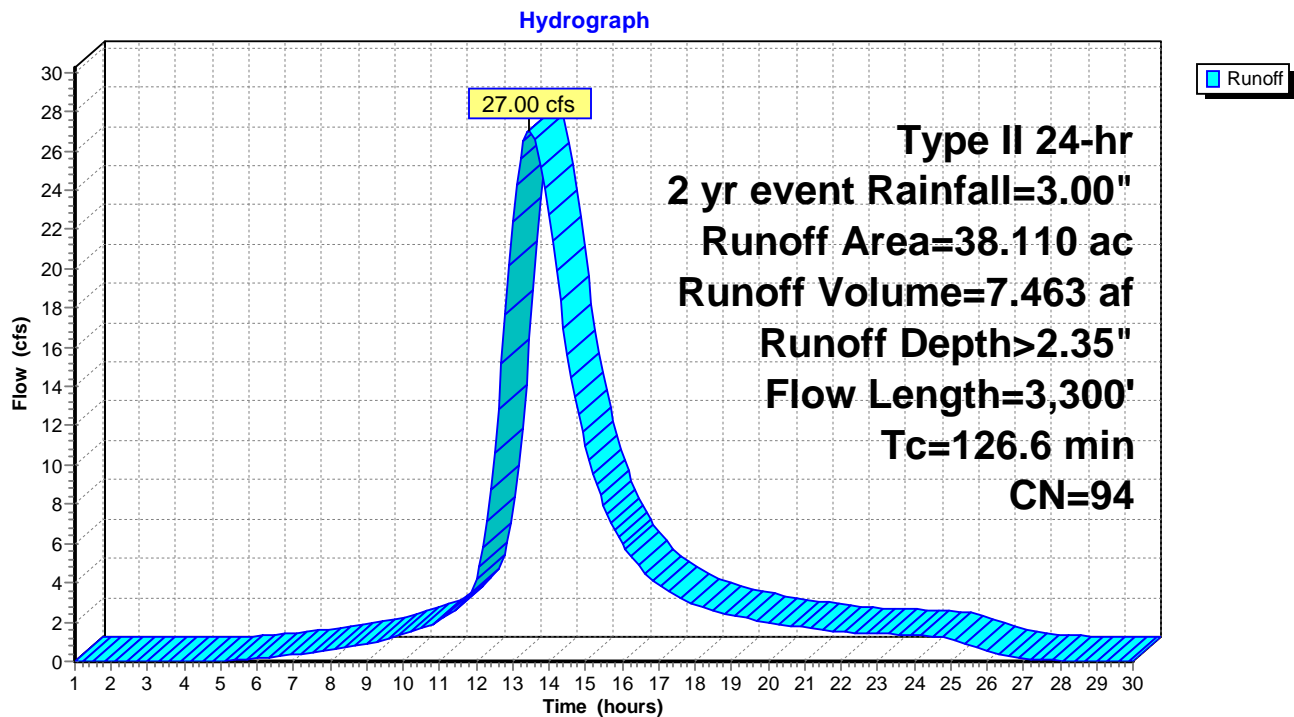
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.10 hrs  
Type II 24-hr 2 yr event Rainfall=3.00"

Area (ac)	CN	Description
35.110	95	Urban commercial, 85% imp, HSG D
3.000	80	>75% Grass cover, Good, HSG D
38.110	94	Weighted Average
8.266		21.69% Pervious Area
29.844		78.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.5	200	0.0025	0.08		Sheet Flow, Grass: Short n= 0.150 P2= 3.00"
86.1	3,100	0.0016	0.60		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
126.6	3,300	Total			

## Subcatchment N: North Sub-Basin



**Freemont Tech Park - Proposed\_100 yr\_Equal Flows**

Type II 24-hr 2 yr event Rainfall=3.00"

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**Summary for Subcatchment SA: South Sub-Basin - A**

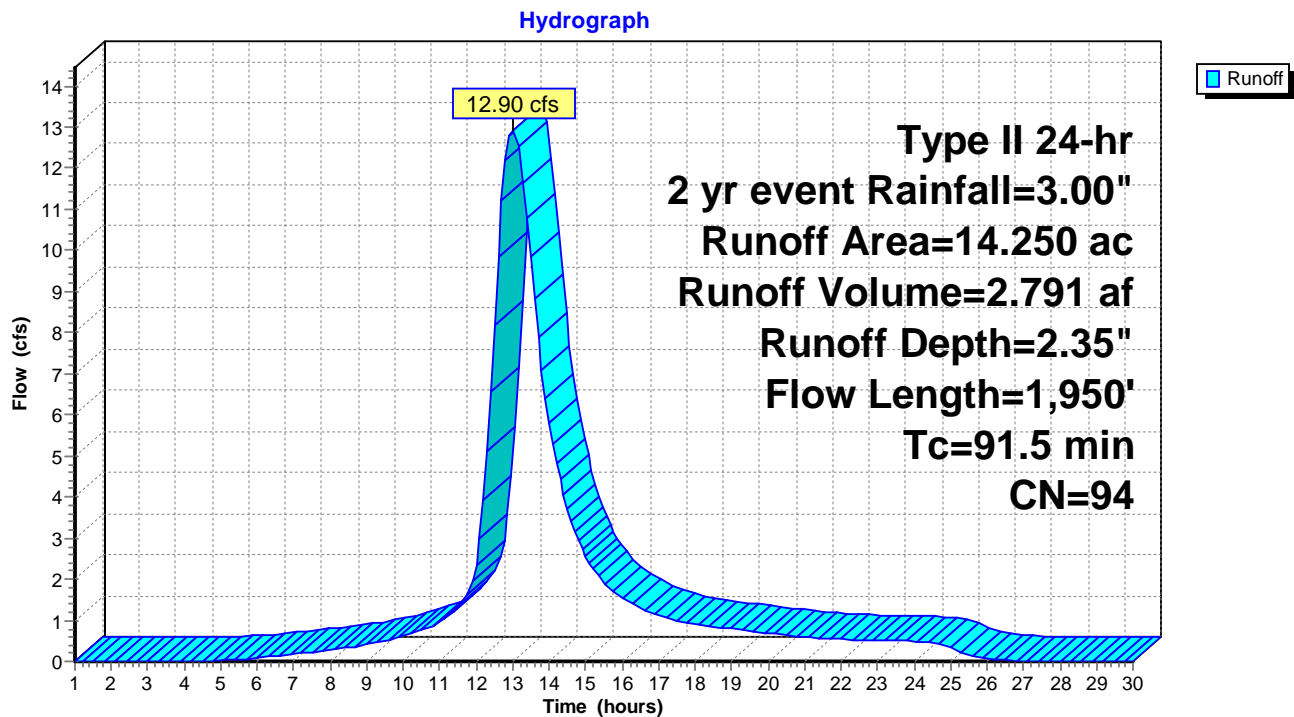
Runoff = 12.90 cfs @ 13.00 hrs, Volume= 2.791 af, Depth= 2.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.10 hrs  
Type II 24-hr 2 yr event Rainfall=3.00"

Area (ac)	CN	Description
13.000	95	Urban commercial, 85% imp, HSG D
1.250	80	>75% Grass cover, Good, HSG D
14.250	94	Weighted Average
3.200		22.46% Pervious Area
11.050		77.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
52.6	200	0.0013	0.06		Sheet Flow, Grass: Short n= 0.150 P2= 3.00"
38.9	1,750	0.0025	0.75		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
91.5	1,950	Total			

**Subcatchment SA: South Sub-Basin - A**

**Freemont Tech Park - Proposed\_100 yr\_Equal Flows**

Type II 24-hr 2 yr event Rainfall=3.00"

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**Summary for Subcatchment SB: South Sub-Basin - B**

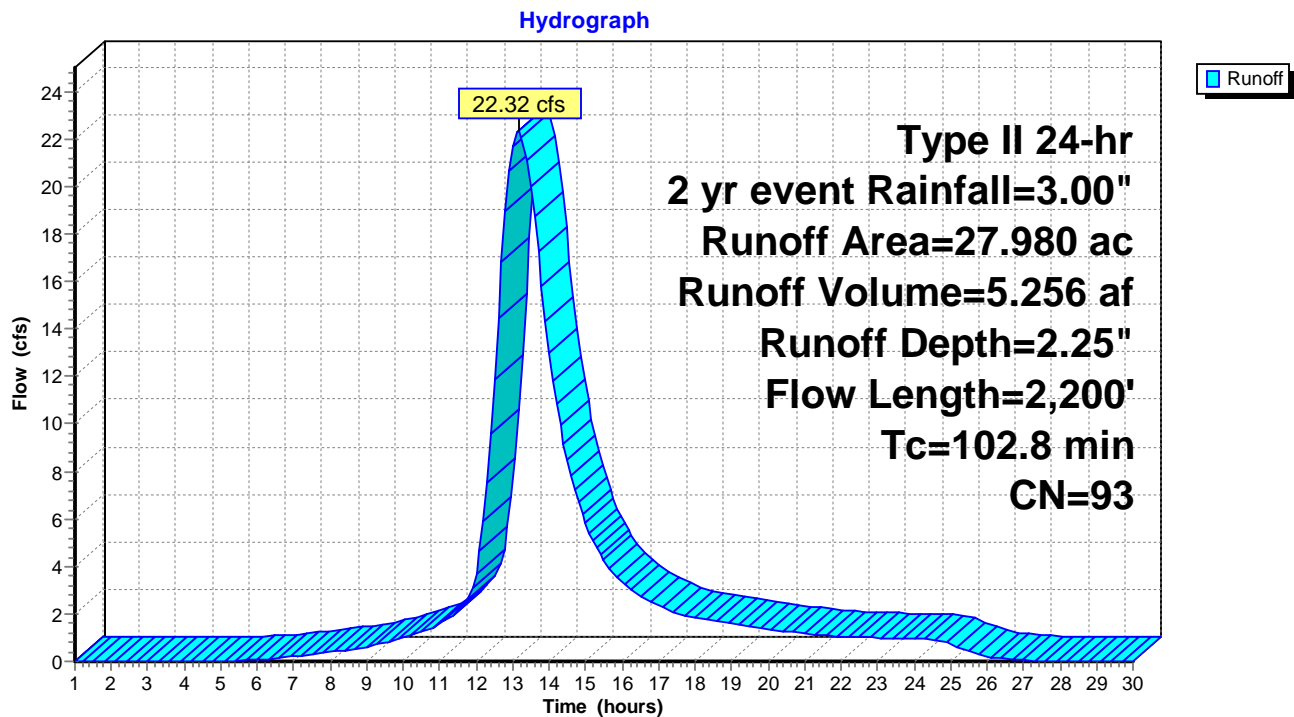
Runoff = 22.32 cfs @ 13.15 hrs, Volume= 5.256 af, Depth= 2.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.10 hrs  
Type II 24-hr 2 yr event Rainfall=3.00"

Area (ac)	CN	Description
24.280	95	Urban commercial, 85% imp, HSG D
3.700	80	>75% Grass cover, Good, HSG D
27.980	93	Weighted Average
7.342		26.24% Pervious Area
20.638		73.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
58.4	200	0.0010	0.06		Sheet Flow, Grass: Short n= 0.150 P2= 3.00"
44.4	2,000	0.0025	0.75		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
102.8	2,200	Total			

**Subcatchment SB: South Sub-Basin - B**

**Freemont Tech Park - Proposed\_100 yr\_Equal Flows**

Type II 24-hr 2 yr event Rainfall=3.00"

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**Summary for Pond 1P: N Pond**

Inflow Area = 38.110 ac, 78.31% Impervious, Inflow Depth > 2.35" for 2 yr event event  
 Inflow = 27.00 cfs @ 13.45 hrs, Volume= 7.463 af  
 Outflow = 13.30 cfs @ 14.72 hrs, Volume= 7.384 af, Atten= 51%, Lag= 76.4 min  
 Primary = 13.30 cfs @ 14.72 hrs, Volume= 7.384 af

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.10 hrs  
 Peak Elev= 1,180.14' @ 14.72 hrs Surf.Area= 84,571 sf Storage= 109,455 cf

Plug-Flow detention time= 120.7 min calculated for 7.384 af (99% of inflow)  
 Center-of-Mass det. time= 113.6 min ( 1,011.9 - 898.3 )

Volume	Invert	Avail.Storage	Storage Description
#1	1,177.95'	304,013 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,177.95	0	0	0
1,178.00	18,042	451	451
1,179.00	47,072	32,557	33,008
1,180.00	81,819	64,446	97,454
1,181.00	100,895	91,357	188,811
1,182.00	129,510	115,203	304,013

Device	Routing	Invert	Outlet Devices
#1	Primary	1,177.95'	<b>36.0" Round RCP_Round 36"</b> L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,177.95' / 1,177.45' S= 0.0050 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 7.07 sf
#2	Device 1	1,177.95'	<b>21.0" Vert. Orifice/Grate</b> C= 0.600
#3	Device 1	1,180.50'	<b>42.0" x 42.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#4	Primary	1,182.00'	<b>50.0' long x 14.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.64 2.67 2.70 2.65 2.64 2.65 2.65 2.63

**Primary OutFlow** Max=13.30 cfs @ 14.72 hrs HW=1,180.14' (Free Discharge)

1=RCP\_Round 36" (Passes 13.30 cfs of 22.13 cfs potential flow)

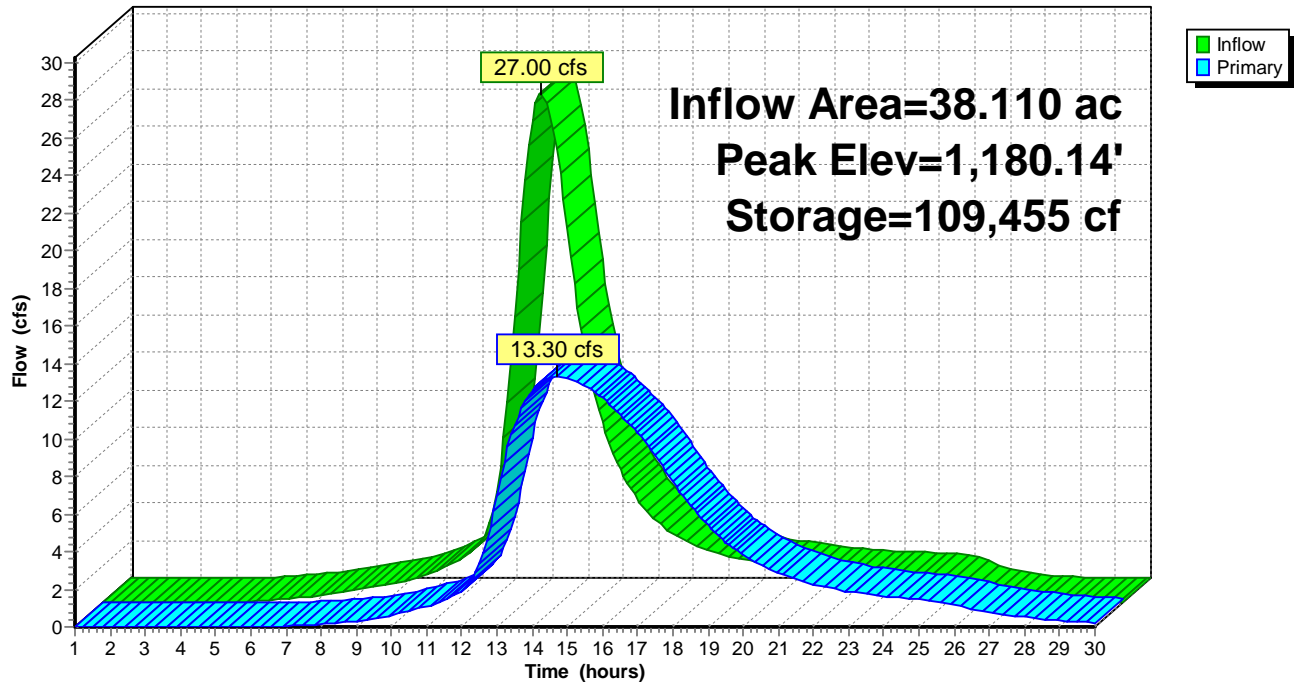
2=Orifice/Grate (Orifice Controls 13.30 cfs @ 5.53 fps)

3=Orifice/Grate (Controls 0.00 cfs)

4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1P: N Pond

Hydrograph





### Summary for Pond 2P: S Pond

Inflow Area = 27.980 ac, 73.76% Impervious, Inflow Depth = 2.25" for 2 yr event event  
 Inflow = 22.32 cfs @ 13.15 hrs, Volume= 5.256 af  
 Outflow = 6.92 cfs @ 14.76 hrs, Volume= 4.841 af, Atten= 69%, Lag= 96.5 min  
 Primary = 6.92 cfs @ 14.76 hrs, Volume= 4.841 af

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.10 hrs  
 Peak Elev= 1,181.15' @ 14.76 hrs Surf.Area= 56,193 sf Storage= 112,467 cf

Plug-Flow detention time= 291.3 min calculated for 4.841 af (92% of inflow)  
 Center-of-Mass det. time= 248.5 min ( 1,130.1 - 881.6 )

Volume	Invert	Avail.Storage	Storage Description
#1	1,177.95'	241,776 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

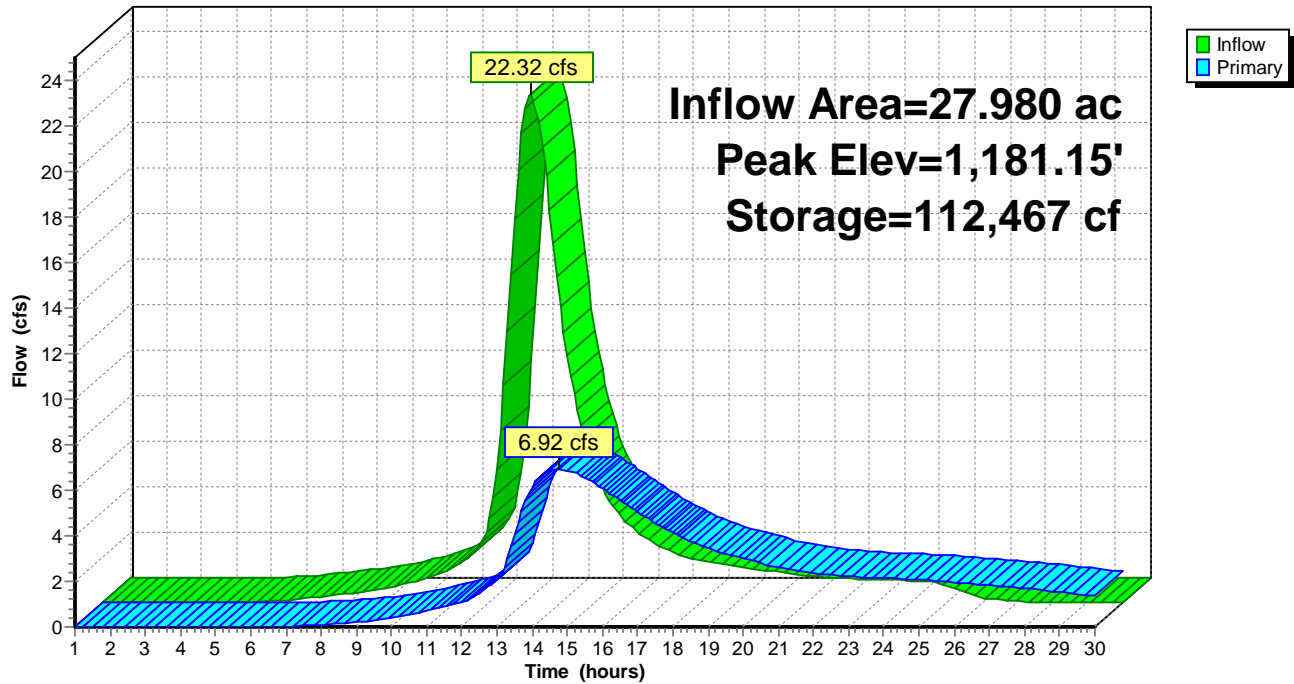
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,177.95	0	0	0
1,178.00	9,652	241	241
1,179.00	30,023	19,838	20,079
1,180.00	42,201	36,112	56,191
1,181.00	54,107	48,154	104,345
1,182.00	68,271	61,189	165,534
1,183.00	84,214	76,243	241,776

Device	Routing	Invert	Outlet Devices
#1	Primary	1,177.95'	<b>24.0" Round RCP_Round 24"</b> L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,177.95' / 1,176.95' S= 0.0100 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	1,177.95'	<b>8.0" Vert. Orifice/Grate</b> C= 0.600
#3	Device 1	1,180.00'	<b>1.0' long x 0.5' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Device 1	1,182.45'	<b>11.0' long x 0.5' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#5	Primary	1,183.00'	<b>30.0' long x 14.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.64 2.67 2.70 2.65 2.64 2.65 2.65 2.63

**Primary OutFlow** Max=6.92 cfs @ 14.76 hrs HW=1,181.15' (Free Discharge)  
 1=RCP\_Round 24" (Passes 6.92 cfs of 22.42 cfs potential flow)  
 2=Orifice/Grate (Orifice Controls 2.84 cfs @ 8.15 fps)  
 3=Broad-Crested Rectangular Weir (Weir Controls 4.08 cfs @ 3.56 fps)  
 4=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)  
 5=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

Pond 2P: S Pond

Hydrograph



### Summary for Pond 3P: Total Prop S

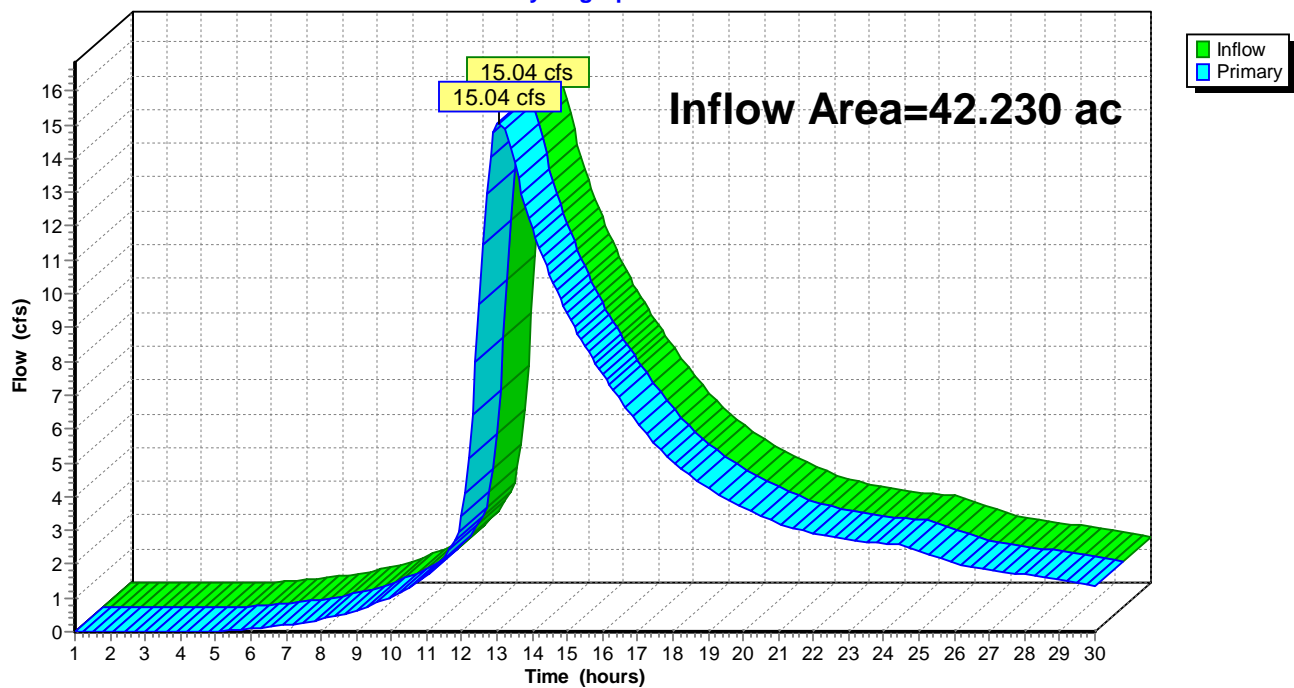
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 42.230 ac, 75.04% Impervious, Inflow Depth > 2.17" for 2 yr event event  
 Inflow = 15.04 cfs @ 13.05 hrs, Volume= 7.632 af  
 Primary = 15.04 cfs @ 13.05 hrs, Volume= 7.632 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.10 hrs

### Pond 3P: Total Prop S

#### Hydrograph



### Summary for Pond 4P: Total Prop

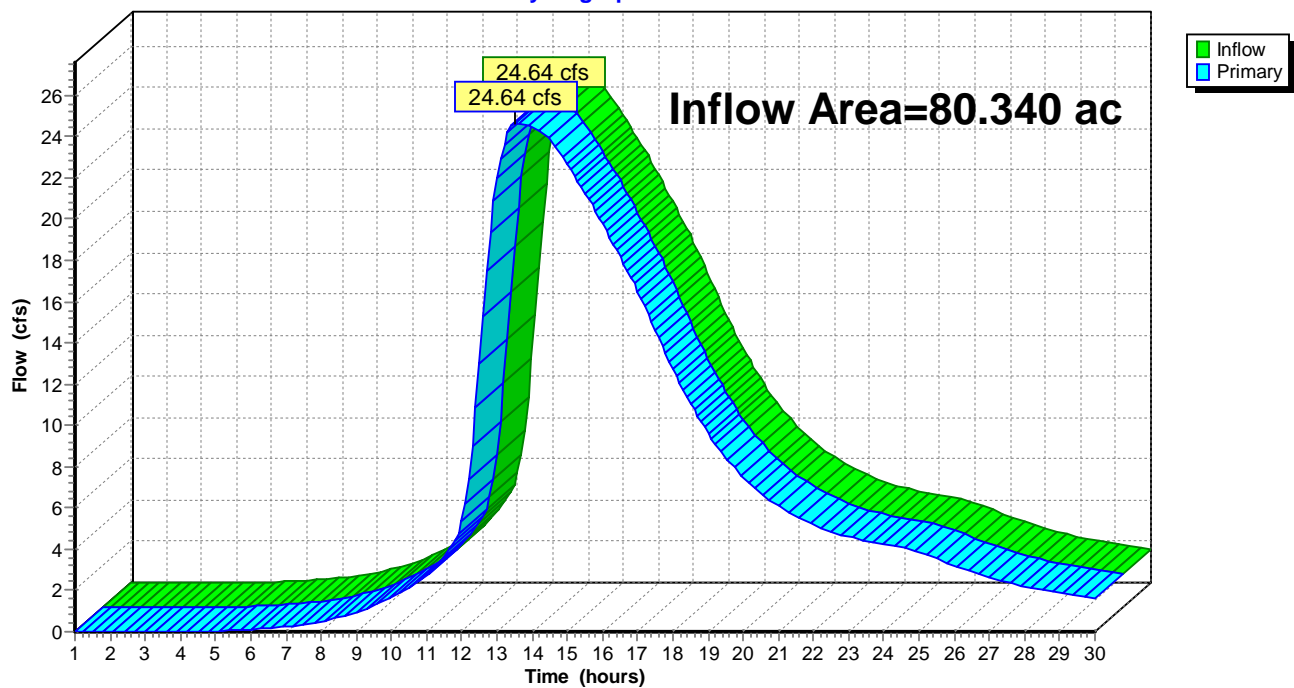
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 80.340 ac, 76.59% Impervious, Inflow Depth > 2.24" for 2 yr event event  
 Inflow = 24.64 cfs @ 13.52 hrs, Volume= 15.015 af  
 Primary = 24.64 cfs @ 13.52 hrs, Volume= 15.015 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.10 hrs

### Pond 4P: Total Prop

#### Hydrograph



# **Freemont Tech Park - Proposed\_100 yr\_Equal Flows**    *Type II 24-hr 10 yr event Rainfall=4.50"*

Prepared by Olsson Associates

Printed 6/28/2021

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Time span=1.00-30.00 hrs, dt=0.10 hrs, 291 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment N: North Sub-Basin**      Runoff Area=38.110 ac    78.31% Impervious    Runoff Depth=3.82"  
Flow Length=3,300'    Tc=126.6 min    CN=94    Runoff=43.13 cfs    12.117 af

**Subcatchment SA: South Sub-Basin - A**      Runoff Area=14.250 ac    77.54% Impervious    Runoff Depth=3.82"  
Flow Length=1,950'    Tc=91.5 min    CN=94    Runoff=20.57 cfs    4.531 af

**Subcatchment SB: South Sub-Basin - B**      Runoff Area=27.980 ac    73.76% Impervious    Runoff Depth=3.71"  
Flow Length=2,200'    Tc=102.8 min    CN=93    Runoff=36.16 cfs    8.645 af

**Pond 1P: N Pond**      Peak Elev=1,180.85'    Storage=174,355 cf    Inflow=43.13 cfs    12.117 af  
Outflow=26.18 cfs    12.022 af

**Pond 2P: S Pond**      Peak Elev=1,182.11'    Storage=173,188 cf    Inflow=36.16 cfs    8.645 af  
Outflow=13.47 cfs    8.002 af

**Pond 3P: Total Prop S**      Inflow=26.46 cfs    12.533 af  
Primary=26.46 cfs    12.533 af

**Pond 4P: Total Prop**      Inflow=46.16 cfs    24.554 af  
Primary=46.16 cfs    24.554 af

**Total Runoff Area = 80.340 ac    Runoff Volume = 25.293 af    Average Runoff Depth = 3.78"**  
**23.41% Pervious = 18.808 ac    76.59% Impervious = 61.532 ac**

### Summary for Subcatchment N: North Sub-Basin

Runoff = 43.13 cfs @ 13.44 hrs, Volume= 12.117 af, Depth> 3.82"

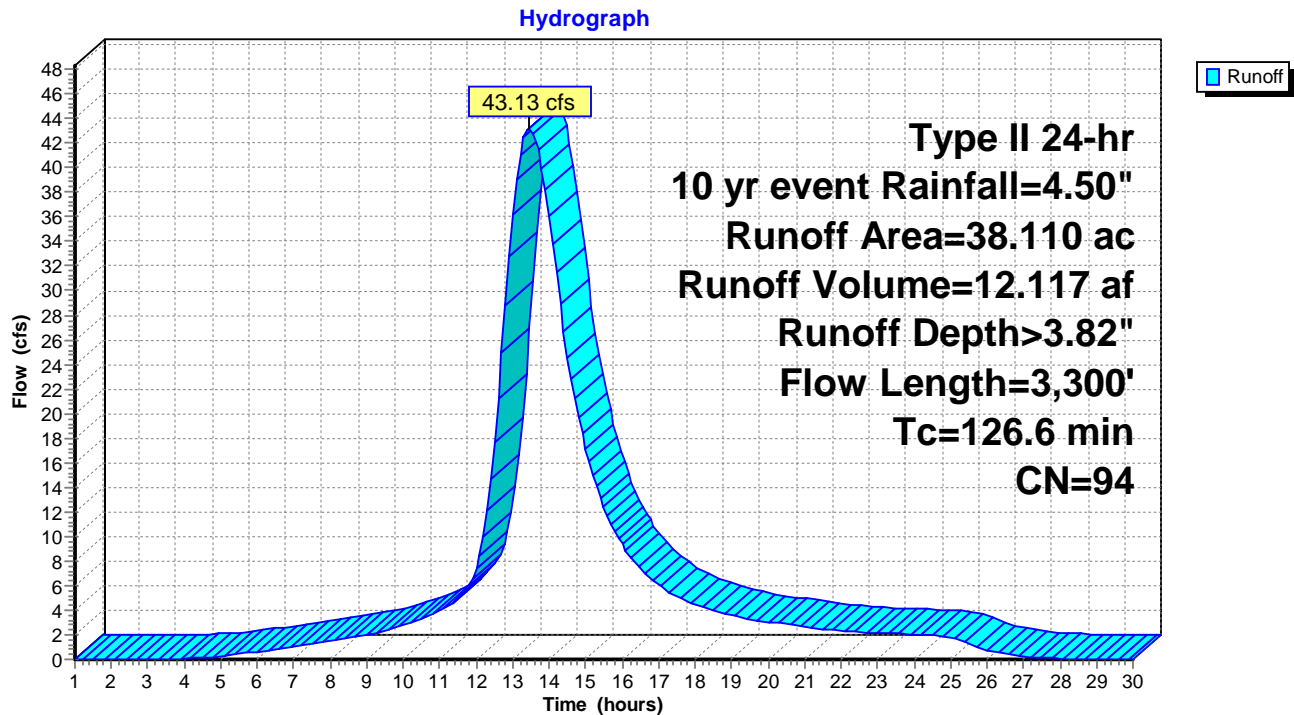
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.10 hrs  
 Type II 24-hr 10 yr event Rainfall=4.50"

Area (ac)	CN	Description
35.110	95	Urban commercial, 85% imp, HSG D
3.000	80	>75% Grass cover, Good, HSG D
38.110	94	Weighted Average
8.266		21.69% Pervious Area
29.844		78.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.5	200	0.0025	0.08		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.00"
86.1	3,100	0.0016	0.60		<b>Shallow Concentrated Flow,</b> Grassed Waterway Kv= 15.0 fps
126.6	3,300	Total			

### Subcatchment N: North Sub-Basin



### Summary for Subcatchment SA: South Sub-Basin - A

Runoff = 20.57 cfs @ 12.99 hrs, Volume= 4.531 af, Depth= 3.82"

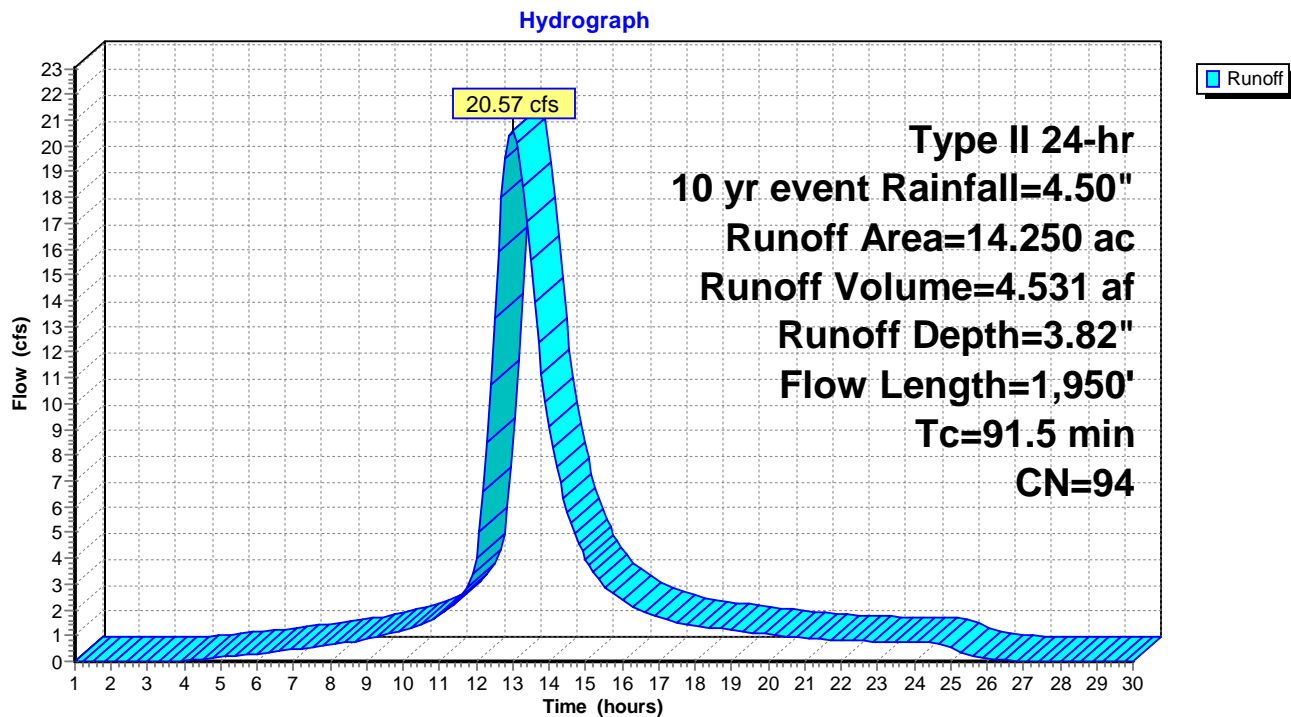
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.10 hrs  
 Type II 24-hr 10 yr event Rainfall=4.50"

Area (ac)	CN	Description
13.000	95	Urban commercial, 85% imp, HSG D
1.250	80	>75% Grass cover, Good, HSG D
14.250	94	Weighted Average
3.200		22.46% Pervious Area
11.050		77.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
52.6	200	0.0013	0.06		Sheet Flow, Grass: Short n= 0.150 P2= 3.00"
38.9	1,750	0.0025	0.75		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
91.5	1,950	Total			

### Subcatchment SA: South Sub-Basin - A



### Summary for Subcatchment SB: South Sub-Basin - B

Runoff = 36.16 cfs @ 13.14 hrs, Volume= 8.645 af, Depth= 3.71"

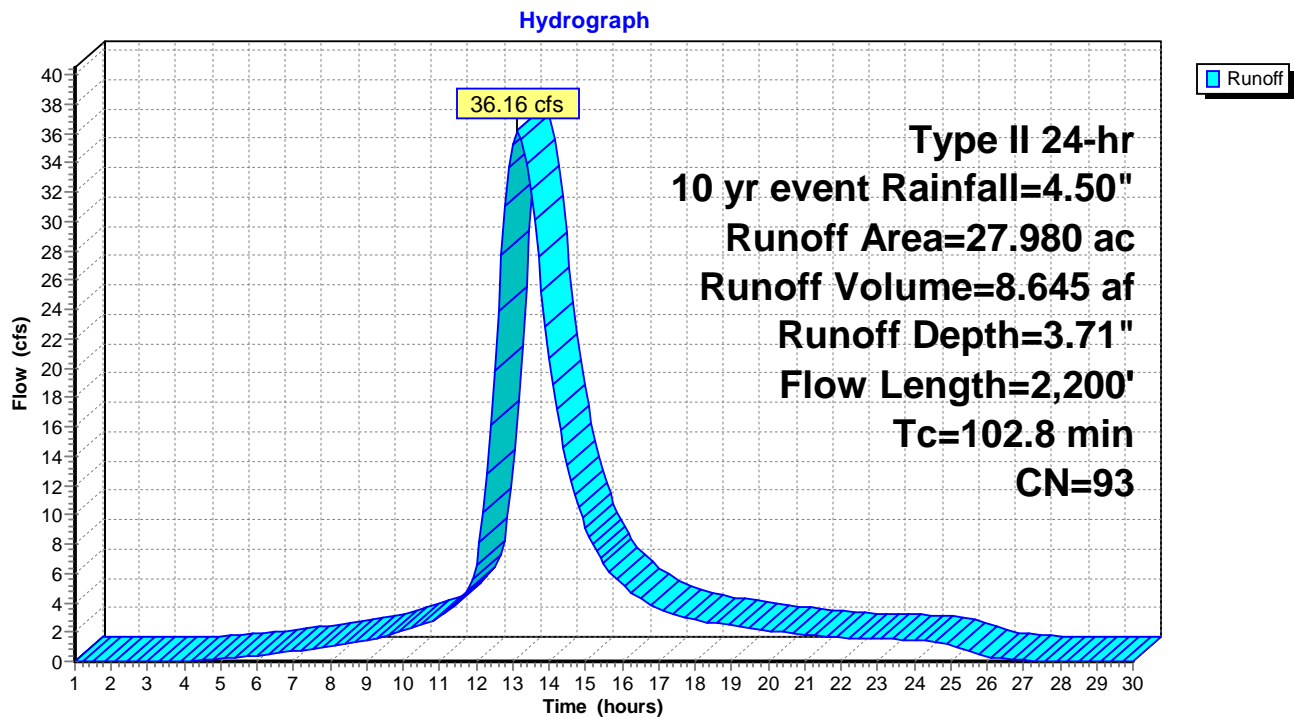
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.10 hrs  
 Type II 24-hr 10 yr event Rainfall=4.50"

Area (ac)	CN	Description
24.280	95	Urban commercial, 85% imp, HSG D
3.700	80	>75% Grass cover, Good, HSG D
27.980	93	Weighted Average
7.342		26.24% Pervious Area
20.638		73.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
58.4	200	0.0010	0.06		Sheet Flow, Grass: Short n= 0.150 P2= 3.00"
44.4	2,000	0.0025	0.75		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
102.8	2,200	Total			

### Subcatchment SB: South Sub-Basin - B





### Summary for Pond 1P: N Pond

Inflow Area = 38.110 ac, 78.31% Impervious, Inflow Depth > 3.82" for 10 yr event event  
 Inflow = 43.13 cfs @ 13.44 hrs, Volume= 12.117 af  
 Outflow = 26.18 cfs @ 14.43 hrs, Volume= 12.022 af, Atten= 39%, Lag= 59.6 min  
 Primary = 26.18 cfs @ 14.43 hrs, Volume= 12.022 af

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.10 hrs  
 Peak Elev= 1,180.85' @ 14.43 hrs Surf.Area= 98,124 sf Storage= 174,355 cf

Plug-Flow detention time= 124.0 min calculated for 11.981 af (99% of inflow)  
 Center-of-Mass det. time= 119.1 min ( 1,004.4 - 885.3 )

Volume	Invert	Avail.Storage	Storage Description
#1	1,177.95'	304,013 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,177.95	0	0	0
1,178.00	18,042	451	451
1,179.00	47,072	32,557	33,008
1,180.00	81,819	64,446	97,454
1,181.00	100,895	91,357	188,811
1,182.00	129,510	115,203	304,013

Device	Routing	Invert	Outlet Devices
#1	Primary	1,177.95'	<b>36.0" Round RCP_Round 36"</b> L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,177.95' / 1,177.45' S= 0.0050 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 7.07 sf
#2	Device 1	1,177.95'	<b>21.0" Vert. Orifice/Grate</b> C= 0.600
#3	Device 1	1,180.50'	<b>42.0" x 42.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#4	Primary	1,182.00'	<b>50.0' long x 14.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.64 2.67 2.70 2.65 2.64 2.65 2.65 2.63

**Primary OutFlow** Max=26.13 cfs @ 14.43 hrs HW=1,180.85' (Free Discharge)

1=RCP\_Round 36" (Passes 26.13 cfs of 33.94 cfs potential flow)

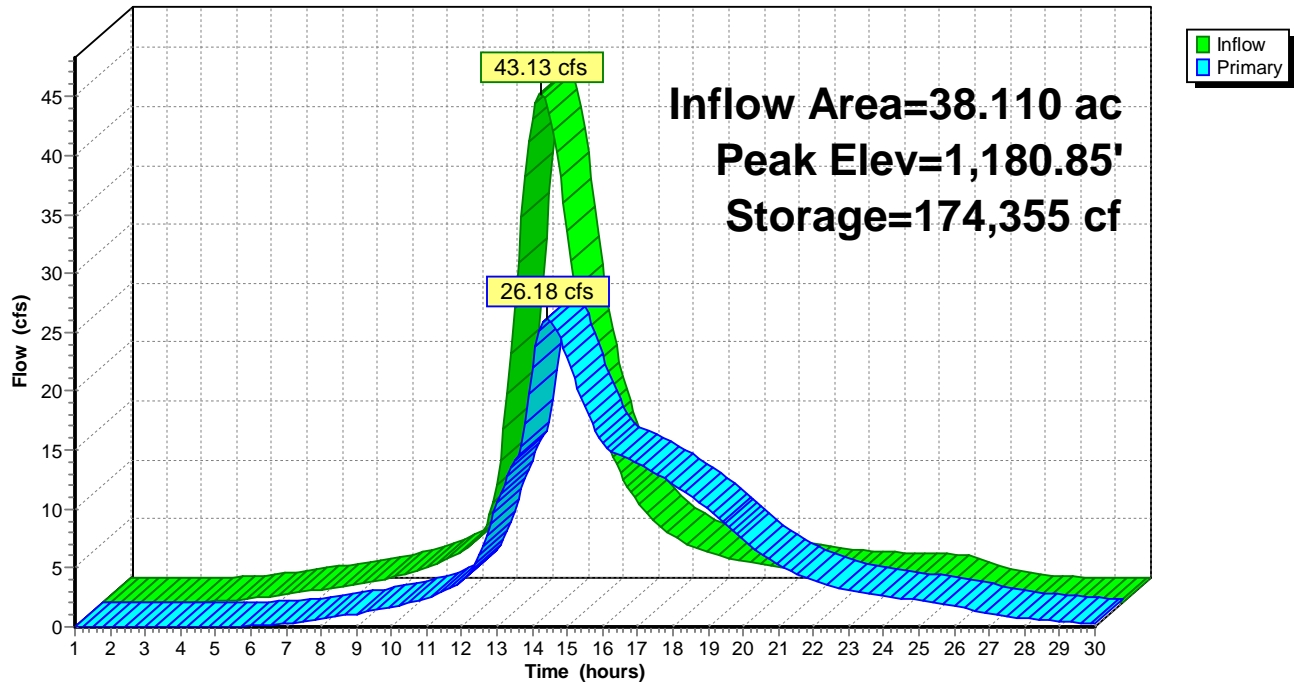
2=Orifice/Grate (Orifice Controls 16.50 cfs @ 6.86 fps)

3=Orifice/Grate (Weir Controls 9.64 cfs @ 1.95 fps)

4=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

Pond 1P: N Pond

Hydrograph



### Summary for Pond 2P: S Pond

Inflow Area = 27.980 ac, 73.76% Impervious, Inflow Depth = 3.71" for 10 yr event event  
 Inflow = 36.16 cfs @ 13.14 hrs, Volume= 8.645 af  
 Outflow = 13.47 cfs @ 14.49 hrs, Volume= 8.002 af, Atten= 63%, Lag= 81.4 min  
 Primary = 13.47 cfs @ 14.49 hrs, Volume= 8.002 af

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.10 hrs  
 Peak Elev= 1,182.11' @ 14.49 hrs Surf.Area= 70,036 sf Storage= 173,188 cf

Plug-Flow detention time= 245.7 min calculated for 8.002 af (93% of inflow)  
 Center-of-Mass det. time= 204.6 min ( 1,072.6 - 868.0 )

Volume	Invert	Avail.Storage	Storage Description
#1	1,177.95'	241,776 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,177.95	0	0	0
1,178.00	9,652	241	241
1,179.00	30,023	19,838	20,079
1,180.00	42,201	36,112	56,191
1,181.00	54,107	48,154	104,345
1,182.00	68,271	61,189	165,534
1,183.00	84,214	76,243	241,776

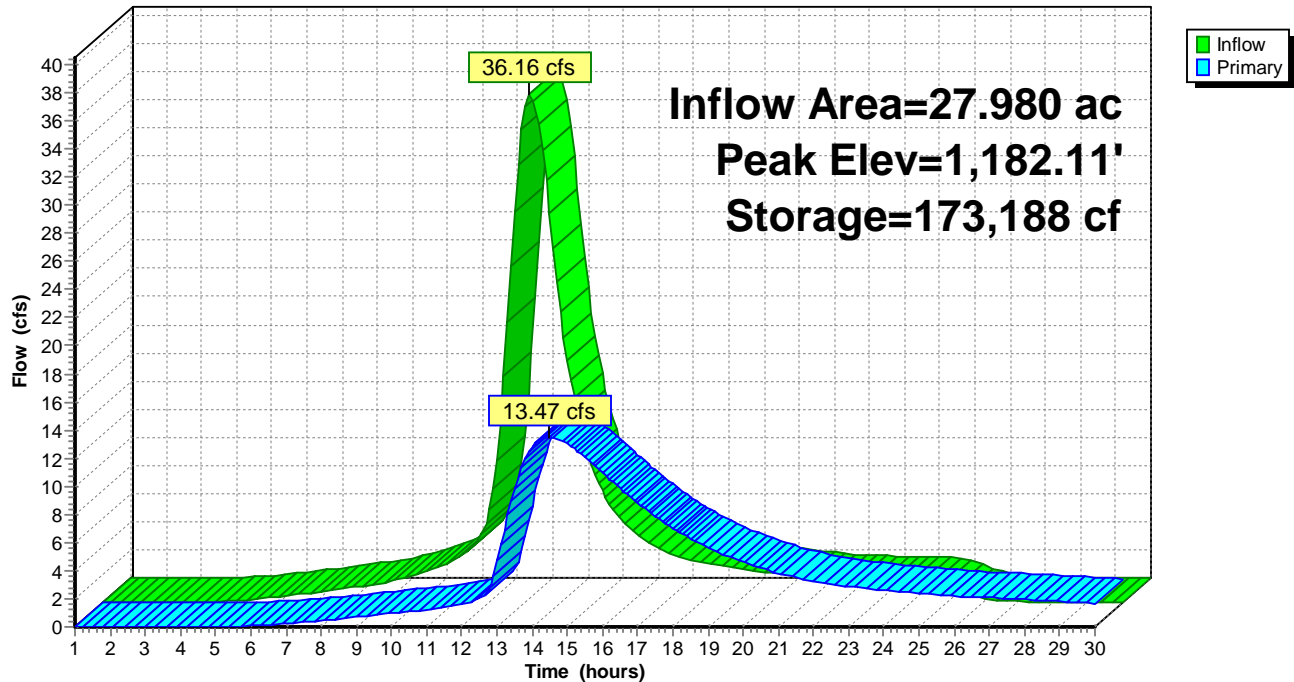
Device	Routing	Invert	Outlet Devices
#1	Primary	1,177.95'	<b>24.0" Round RCP_Round 24"</b> L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,177.95' / 1,176.95' S= 0.0100 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	1,177.95'	<b>8.0" Vert. Orifice/Grate</b> C= 0.600
#3	Device 1	1,180.00'	<b>1.0' long x 0.5' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Device 1	1,182.45'	<b>11.0' long x 0.5' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#5	Primary	1,183.00'	<b>30.0' long x 14.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.64 2.67 2.70 2.65 2.64 2.65 2.65 2.63

**Primary OutFlow** Max=13.47 cfs @ 14.49 hrs HW=1,182.11' (Free Discharge)

1=RCP\_Round 24" (Passes 13.47 cfs of 26.89 cfs potential flow)  
 2=Orifice/Grate (Orifice Controls 3.29 cfs @ 9.42 fps)  
 3=Broad-Crested Rectangular Weir (Weir Controls 10.18 cfs @ 4.82 fps)  
 4=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)  
 5=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

Pond 2P: S Pond

Hydrograph



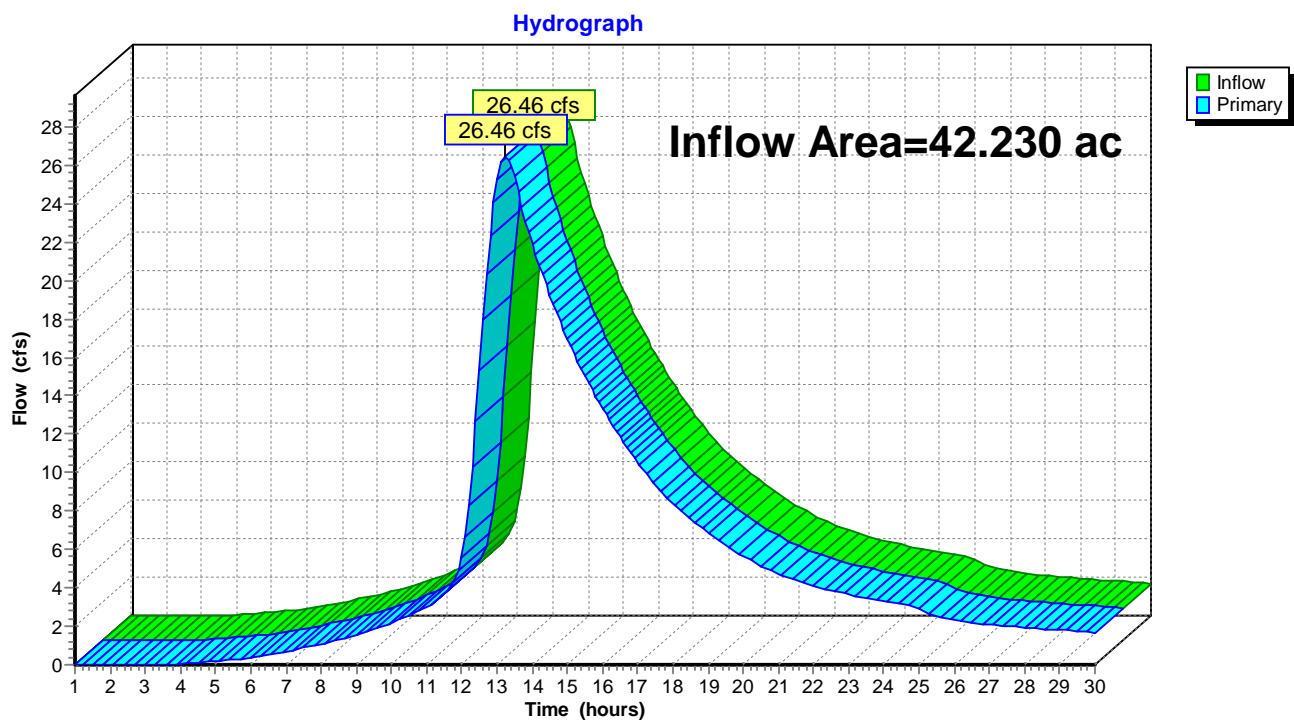
### Summary for Pond 3P: Total Prop S

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 42.230 ac, 75.04% Impervious, Inflow Depth > 3.56" for 10 yr event event  
Inflow = 26.46 cfs @ 13.24 hrs, Volume= 12.533 af  
Primary = 26.46 cfs @ 13.24 hrs, Volume= 12.533 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.10 hrs

### Pond 3P: Total Prop S



### Summary for Pond 4P: Total Prop

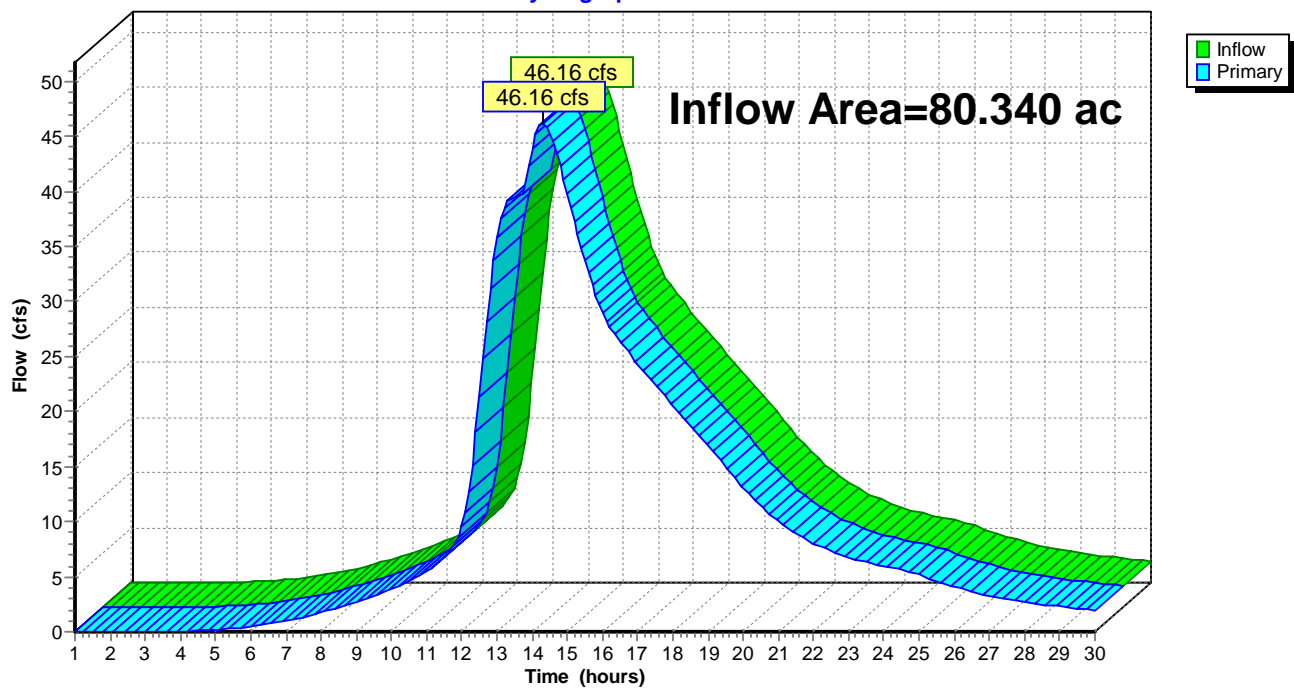
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 80.340 ac, 76.59% Impervious, Inflow Depth > 3.67" for 10 yr event event  
Inflow = 46.16 cfs @ 14.30 hrs, Volume= 24.554 af  
Primary = 46.16 cfs @ 14.30 hrs, Volume= 24.554 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.10 hrs

### Pond 4P: Total Prop

#### Hydrograph



# **Freemont Tech Park - Proposed\_100 yr\_Equal Flows Type II 24-hr 100 yr event Rainfall=6.70"**

Prepared by Olsson Associates

Printed 6/28/2021

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Time span=1.00-30.00 hrs, dt=0.10 hrs, 291 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment N: North Sub-Basin** Runoff Area=38.110 ac 78.31% Impervious Runoff Depth=5.99"  
Flow Length=3,300' Tc=126.6 min CN=94 Runoff=66.52 cfs 19.025 af

**Subcatchment SA: South Sub-Basin - A** Runoff Area=14.250 ac 77.54% Impervious Runoff Depth=5.99"  
Flow Length=1,950' Tc=91.5 min CN=94 Runoff=31.69 cfs 7.114 af

**Subcatchment SB: South Sub-Basin - B** Runoff Area=27.980 ac 73.76% Impervious Runoff Depth=5.87"  
Flow Length=2,200' Tc=102.8 min CN=93 Runoff=56.24 cfs 13.697 af

**Pond 1P: N Pond** Peak Elev=1,181.47' Storage=239,369 cf Inflow=66.52 cfs 19.025 af  
Outflow=43.19 cfs 18.912 af

**Pond 2P: S Pond** Peak Elev=1,182.99' Storage=241,142 cf Inflow=56.24 cfs 13.697 af  
Outflow=30.41 cfs 12.865 af

**Pond 3P: Total Prop S** Inflow=48.85 cfs 19.978 af  
Primary=48.85 cfs 19.978 af

**Pond 4P: Total Prop** Inflow=88.56 cfs 38.890 af  
Primary=88.56 cfs 38.890 af

**Total Runoff Area = 80.340 ac Runoff Volume = 39.836 af Average Runoff Depth = 5.95"**  
**23.41% Pervious = 18.808 ac 76.59% Impervious = 61.532 ac**

# Freemont Tech Park - Proposed\_100 yr\_Equal Flows Type II 24-hr 100 yr event Rainfall=6.70"

Prepared by Olsson Associates

Printed 6/28/2021

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## Summary for Subcatchment N: North Sub-Basin

Runoff = 66.52 cfs @ 13.43 hrs, Volume= 19.025 af, Depth> 5.99"

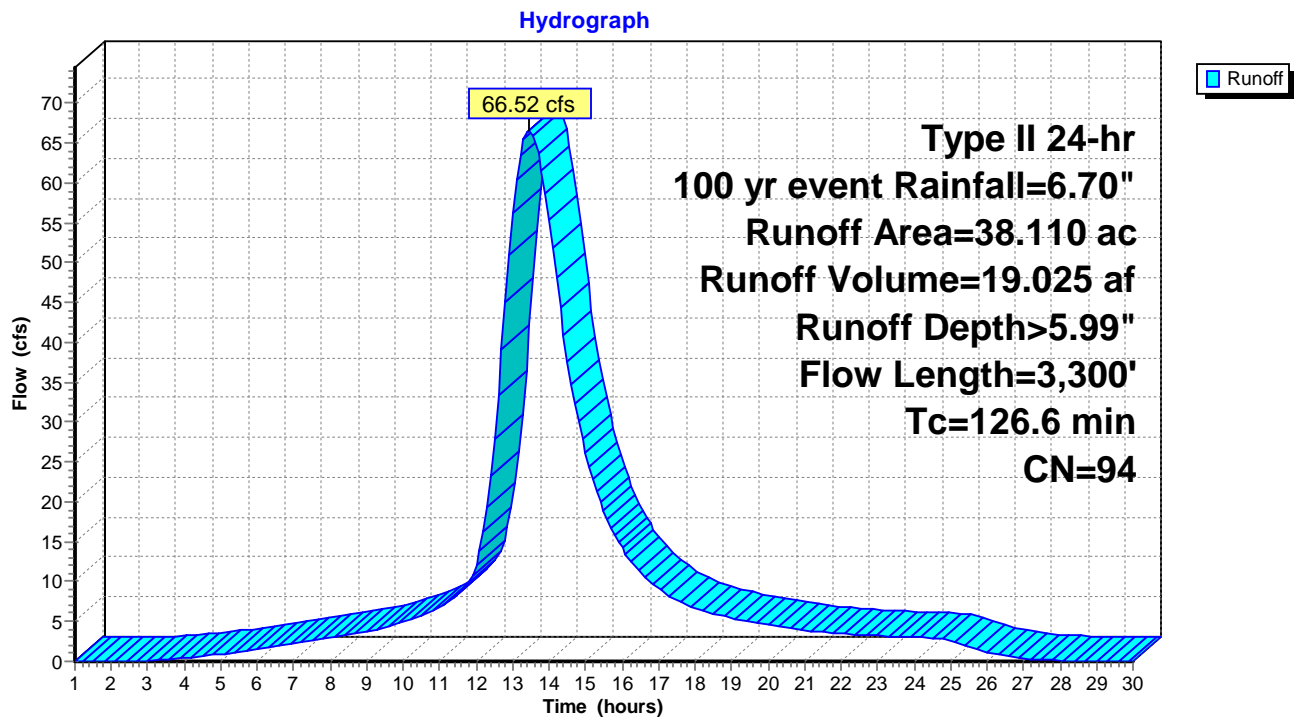
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.10 hrs  
Type II 24-hr 100 yr event Rainfall=6.70"

Area (ac)	CN	Description
35.110	95	Urban commercial, 85% imp, HSG D
3.000	80	>75% Grass cover, Good, HSG D
38.110	94	Weighted Average
8.266		21.69% Pervious Area
29.844		78.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.5	200	0.0025	0.08		Sheet Flow, Grass: Short n= 0.150 P2= 3.00"
86.1	3,100	0.0016	0.60		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
126.6	3,300	Total			

## Subcatchment N: North Sub-Basin





### Summary for Subcatchment SA: South Sub-Basin - A

Runoff = 31.69 cfs @ 12.98 hrs, Volume= 7.114 af, Depth= 5.99"

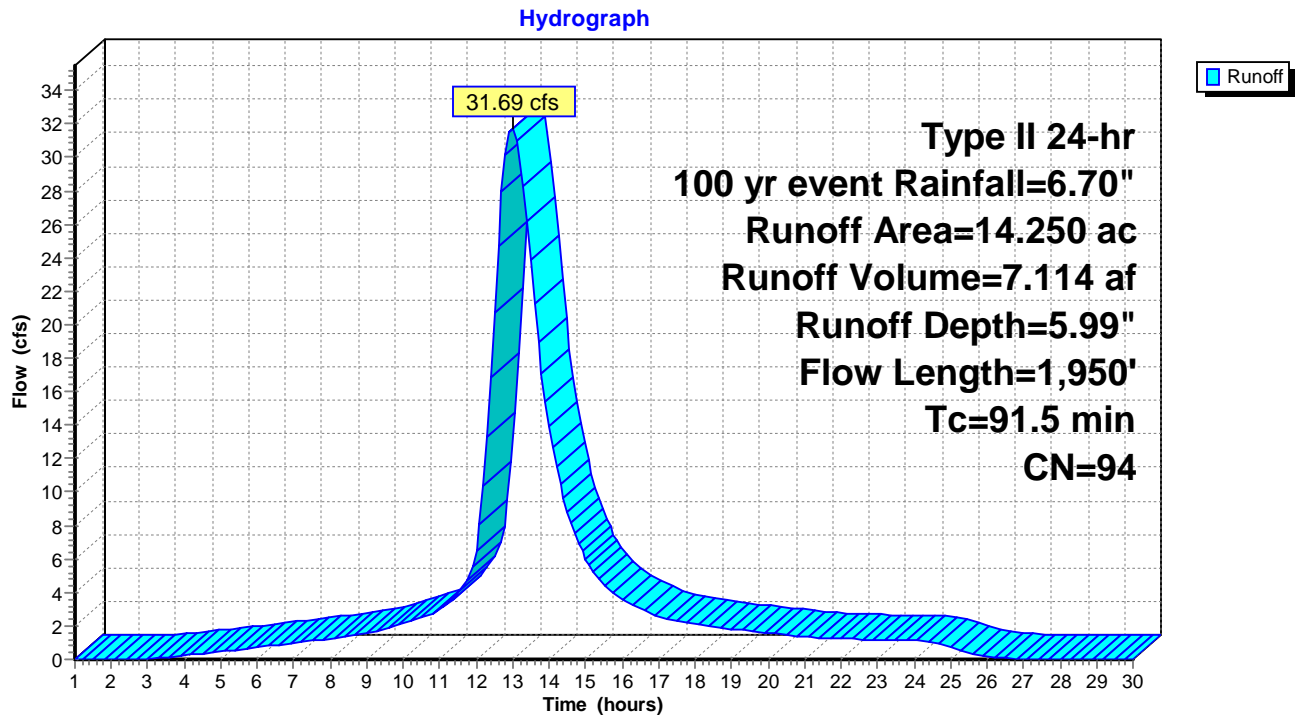
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.10 hrs  
 Type II 24-hr 100 yr event Rainfall=6.70"

Area (ac)	CN	Description
13.000	95	Urban commercial, 85% imp, HSG D
1.250	80	>75% Grass cover, Good, HSG D
14.250	94	Weighted Average
3.200		22.46% Pervious Area
11.050		77.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
52.6	200	0.0013	0.06		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.00"
38.9	1,750	0.0025	0.75		<b>Shallow Concentrated Flow,</b> Grassed Waterway Kv= 15.0 fps
91.5	1,950	Total			

### Subcatchment SA: South Sub-Basin - A



# Freemont Tech Park - Proposed\_100 yr\_Equal Flows Type II 24-hr 100 yr event Rainfall=6.70"

Prepared by Olsson Associates

Printed 6/28/2021

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## Summary for Subcatchment SB: South Sub-Basin - B

Runoff = 56.24 cfs @ 13.13 hrs, Volume= 13.697 af, Depth= 5.87"

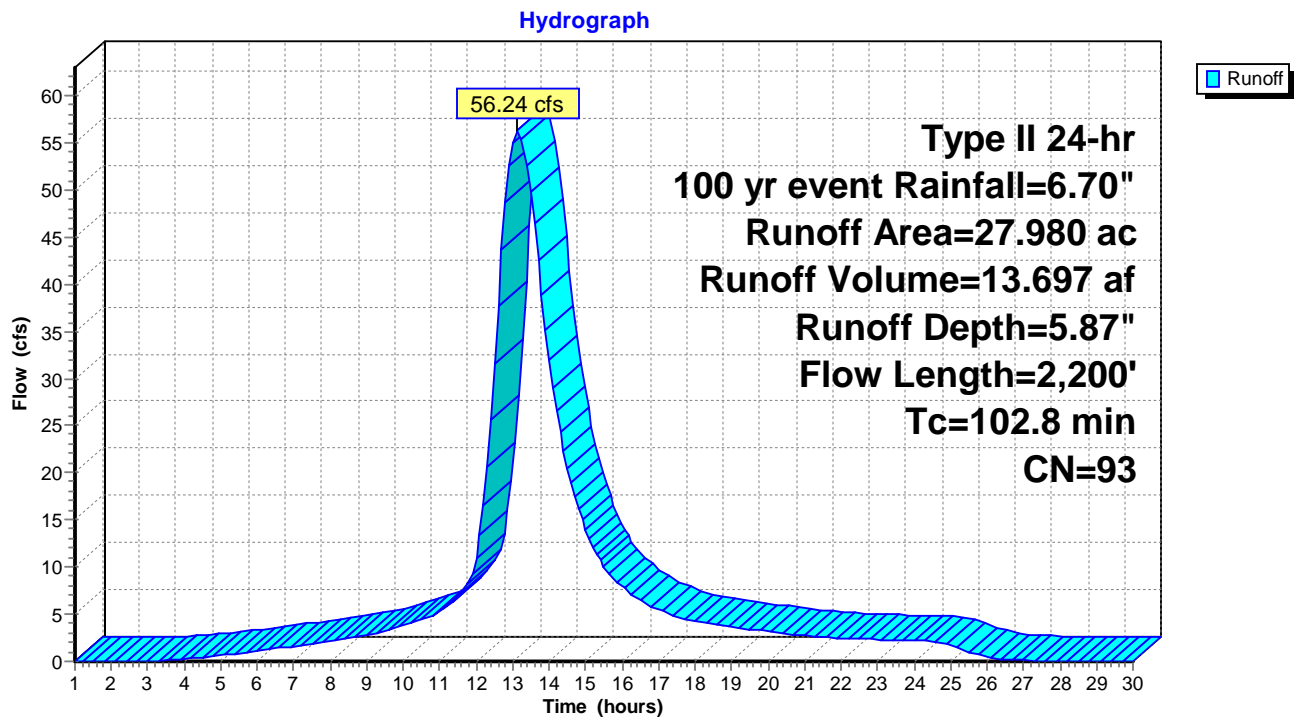
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.10 hrs  
Type II 24-hr 100 yr event Rainfall=6.70"

Area (ac)	CN	Description
24.280	95	Urban commercial, 85% imp, HSG D
3.700	80	>75% Grass cover, Good, HSG D
27.980	93	Weighted Average
7.342		26.24% Pervious Area
20.638		73.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
58.4	200	0.0010	0.06		Sheet Flow, Grass: Short n= 0.150 P2= 3.00"
44.4	2,000	0.0025	0.75		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
102.8	2,200	Total			

## Subcatchment SB: South Sub-Basin - B



### Summary for Pond 1P: N Pond

Inflow Area = 38.110 ac, 78.31% Impervious, Inflow Depth > 5.99" for 100 yr event event  
 Inflow = 66.52 cfs @ 13.43 hrs, Volume= 19.025 af  
 Outflow = 43.19 cfs @ 14.33 hrs, Volume= 18.912 af, Atten= 35%, Lag= 54.3 min  
 Primary = 43.19 cfs @ 14.33 hrs, Volume= 18.912 af

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.10 hrs  
 Peak Elev= 1,181.47' @ 14.33 hrs Surf.Area= 114,338 sf Storage= 239,369 cf

Plug-Flow detention time= 109.4 min calculated for 18.847 af (99% of inflow)  
 Center-of-Mass det. time= 105.6 min ( 979.9 - 874.2 )

Volume	Invert	Avail.Storage	Storage Description
#1	1,177.95'	304,013 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,177.95	0	0	0
1,178.00	18,042	451	451
1,179.00	47,072	32,557	33,008
1,180.00	81,819	64,446	97,454
1,181.00	100,895	91,357	188,811
1,182.00	129,510	115,203	304,013

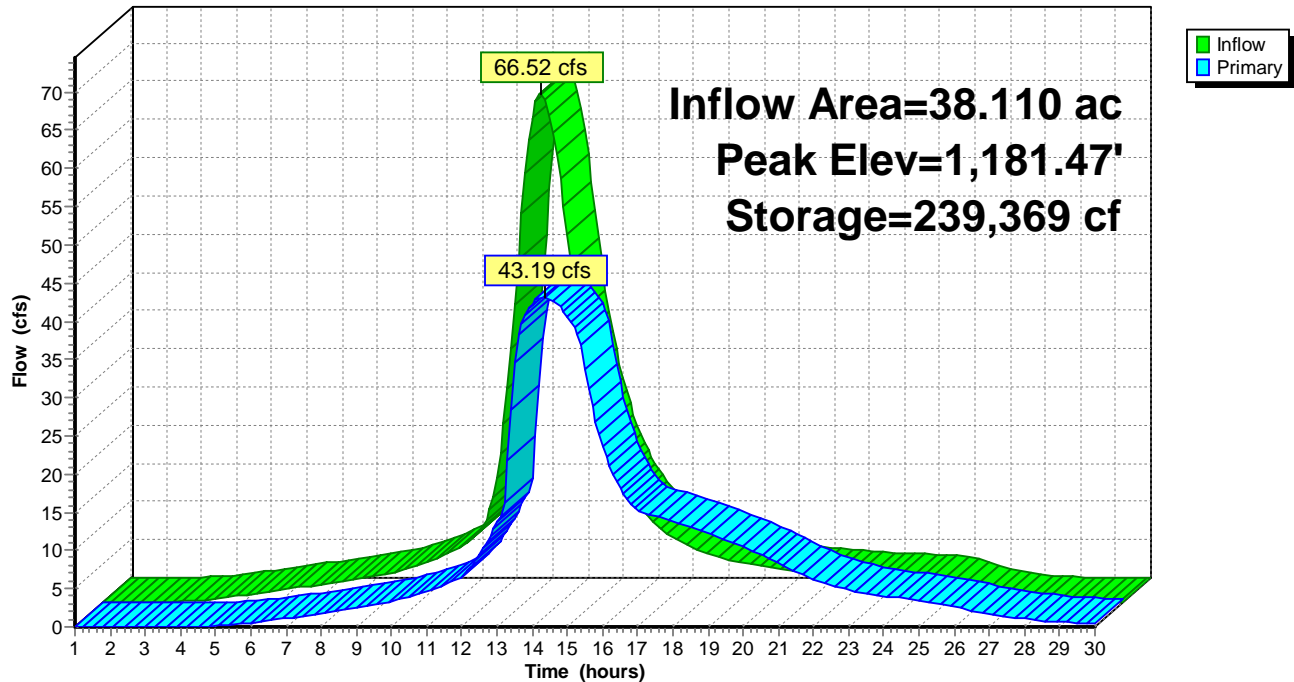
Device	Routing	Invert	Outlet Devices
#1	Primary	1,177.95'	<b>36.0" Round RCP_Round 36"</b> L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,177.95' / 1,177.45' S= 0.0050 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 7.07 sf
#2	Device 1	1,177.95'	<b>21.0" Vert. Orifice/Grate</b> C= 0.600
#3	Device 1	1,180.50'	<b>42.0" x 42.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#4	Primary	1,182.00'	<b>50.0' long x 14.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.64 2.67 2.70 2.65 2.64 2.65 2.65 2.63

**Primary OutFlow** Max=43.17 cfs @ 14.33 hrs HW=1,181.47' (Free Discharge)

1=RCP\_Round 36" (Barrel Controls 43.17 cfs @ 6.56 fps)  
 2=Orifice/Grate (Passes < 18.83 cfs potential flow)  
 3=Orifice/Grate (Passes < 43.63 cfs potential flow)  
 4=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

Pond 1P: N Pond

Hydrograph



### Summary for Pond 2P: S Pond

Inflow Area = 27.980 ac, 73.76% Impervious, Inflow Depth = 5.87" for 100 yr event event  
 Inflow = 56.24 cfs @ 13.13 hrs, Volume= 13.697 af  
 Outflow = 30.41 cfs @ 14.05 hrs, Volume= 12.865 af, Atten= 46%, Lag= 55.1 min  
 Primary = 30.41 cfs @ 14.05 hrs, Volume= 12.865 af

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.10 hrs  
 Peak Elev= 1,182.99' @ 14.05 hrs Surf.Area= 84,094 sf Storage= 241,142 cf

Plug-Flow detention time= 202.1 min calculated for 12.820 af (94% of inflow)  
 Center-of-Mass det. time= 168.0 min ( 1,024.2 - 856.2 )

Volume	Invert	Avail.Storage	Storage Description
#1	1,177.95'	241,776 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,177.95	0	0	0
1,178.00	9,652	241	241
1,179.00	30,023	19,838	20,079
1,180.00	42,201	36,112	56,191
1,181.00	54,107	48,154	104,345
1,182.00	68,271	61,189	165,534
1,183.00	84,214	76,243	241,776

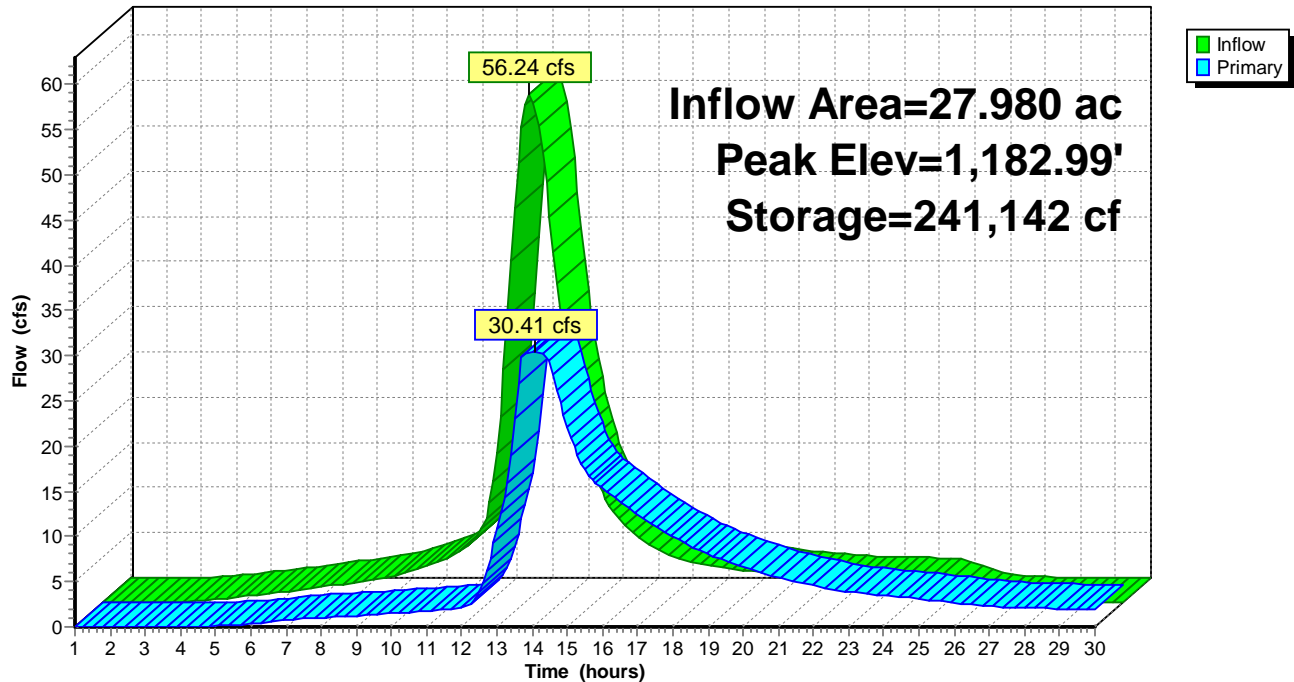
Device	Routing	Invert	Outlet Devices
#1	Primary	1,177.95'	<b>24.0" Round RCP_Round 24"</b> L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,177.95' / 1,176.95' S= 0.0100 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	1,177.95'	<b>8.0" Vert. Orifice/Grate</b> C= 0.600
#3	Device 1	1,180.00'	<b>1.0' long x 0.5' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Device 1	1,182.45'	<b>11.0' long x 0.5' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#5	Primary	1,183.00'	<b>30.0' long x 14.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.64 2.67 2.70 2.65 2.64 2.65 2.65 2.63

**Primary OutFlow** Max=30.41 cfs @ 14.05 hrs HW=1,182.99' (Free Discharge)

1=RCP\_Round 24" (Inlet Controls 30.41 cfs @ 9.68 fps)  
 2=Orifice/Grate (Passes < 3.65 cfs potential flow)  
 3=Broad-Crested Rectangular Weir (Passes < 17.17 cfs potential flow)  
 4=Broad-Crested Rectangular Weir (Passes < 13.28 cfs potential flow)  
 5=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

Pond 2P: S Pond

Hydrograph



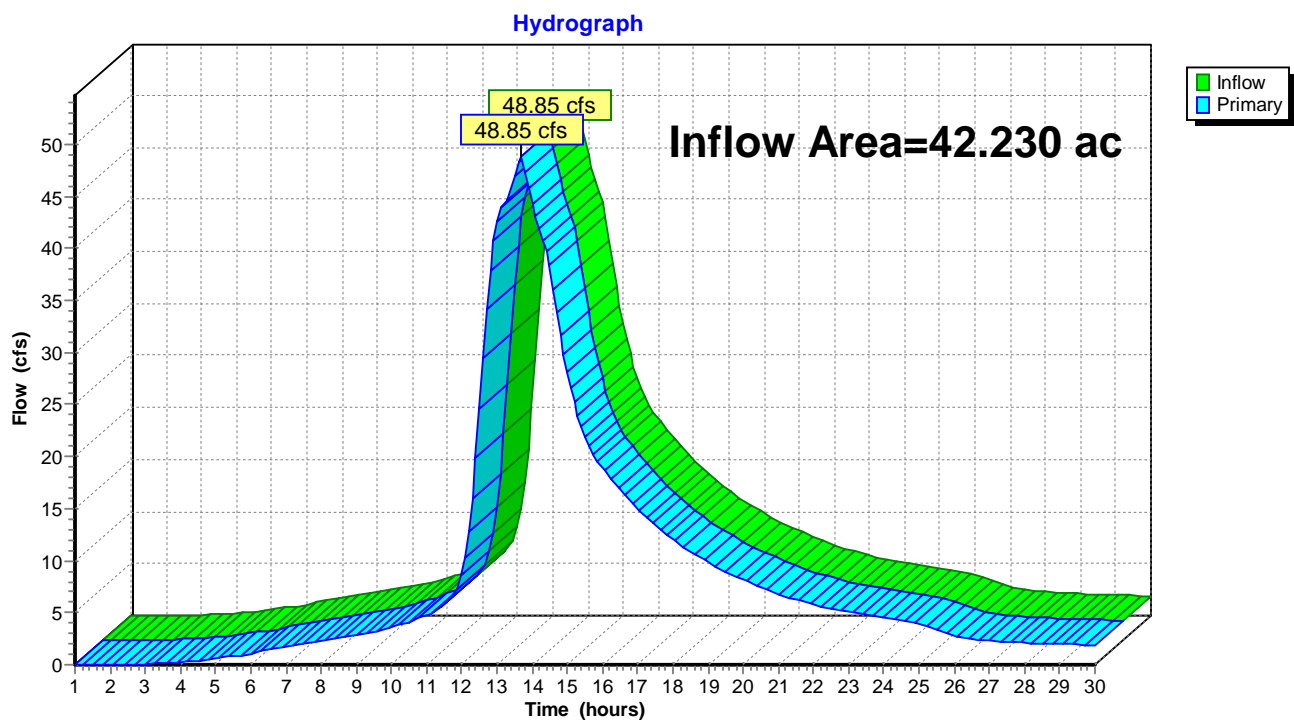
### Summary for Pond 3P: Total Prop S

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 42.230 ac, 75.04% Impervious, Inflow Depth > 5.68" for 100 yr event event  
Inflow = 48.85 cfs @ 13.68 hrs, Volume= 19.978 af  
Primary = 48.85 cfs @ 13.68 hrs, Volume= 19.978 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.10 hrs

### Pond 3P: Total Prop S



### Summary for Pond 4P: Total Prop

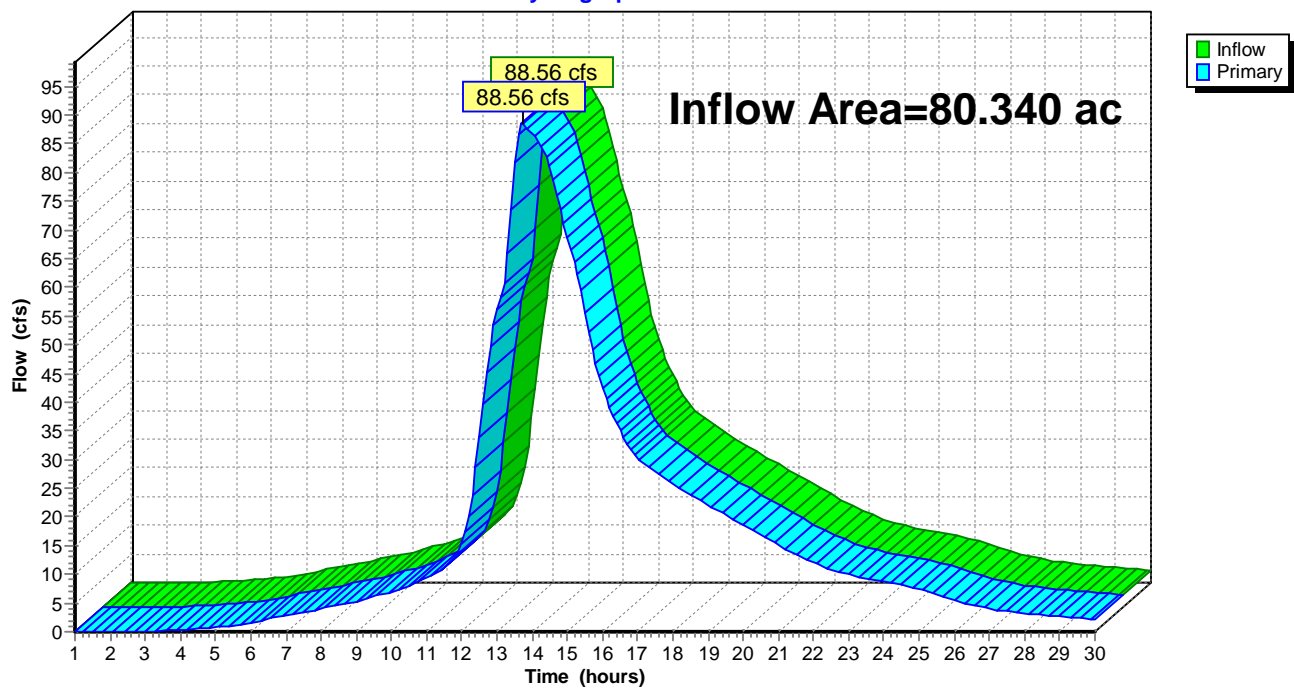
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 80.340 ac, 76.59% Impervious, Inflow Depth > 5.81" for 100 yr event event  
Inflow = 88.56 cfs @ 13.73 hrs, Volume= 38.890 af  
Primary = 88.56 cfs @ 13.73 hrs, Volume= 38.890 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.10 hrs

### Pond 4P: Total Prop

#### Hydrograph





# **FREMONT TECHNOLOGY PARK**

Fremont, NE - 2021

June 2021

Olsson Project No. 018-1554

## Staff Report

**TO:** Planning Commission  
**FROM:** Jennifer L. Dam, AICP, Planning Director  
**DATE:** July 19, 2021  
**SUBJECT:** Fremont Technology Park Replat 3 Final Plat

---

**Recommendation:** Recommend Approval to City Council

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### Background:

This is a request for a final plat expanding the number of lots in the Fremont Technology Park.

The City Council approved the Fremont Technology Park Preliminary Plat and the Fremont Technology Park final plat in October, 2013. The Fremont Technology Park Replat of Outlot A was approved in December, 2014. The Fremont Technology Park Replat of Outlot B, administrative plat was approved in April, 2020. The Fremont Technology Park 1<sup>st</sup> Addition Replat of Outlot B and Lot 2 and Lot 3, administrative plat, was approved in December 2020. The Fremont Technology Park 2<sup>nd</sup> Addition, administrative plat, was approved in March, 2021.

On April 19, 2021, the Planning Commission held a public hearing and recommended approval to the Fremont Technology Park 3<sup>rd</sup> Addition preliminary plat and final plat with a 9-0 vote.

On May 11, 2021 the City Council voted to have the five lots abutting Outlot A combined into Outlot A to accommodate drainage and to send the Preliminary and Final Plats back to the Planning Commission for their review.

On May 24, 2021, the revised Preliminary Plat and Final Plat with the lots on the east side of Buckingham Circle/Road included in Outlot A was reviewed by the Planning Commission. The recommended approval to the revised Preliminary Plat but requested additional drainage information for the final plat. The Planning Commission recommended to table the final plat until additional drainage information was brought forward.

The revised drainage study is attached to the preliminary plat. The final plat has been revised to show a larger drainage basin. The outlot has increased 2.63 acres from 3.97 acres to 6.6 acres. The lot depths on the eastern edge adjacent to the drainage basin are now 200 feet instead of 287 feet.

The final plat is consistent with the Preliminary Plat.

A subdivision agreement is not required as the City is the subdivider.

DWG: F:\2018\1501-2000\018-1554\40-Design\Survey\SPVY\Final Plots\3rd Addition\Drawings\FP\_FTP\_3rd Addition.dwg  
DATE: Jul 14, 2021 5:21pm  
XREFS: 202103.02\_GNCY\_Fremont Site Layout B130592\_NLA  
USER: abroeker

# FREMONT TECHNOLOGY PARK 3RD ADDITION



## LEGAL DESCRIPTION

A TRACT OF LAND COMPOSED OF LOT OUTLOT "B" FREMONT TECHNOLOGY PARK 1ST ADDITION AND OUTLOT "A" FREMONT TECHNOLOGY PARK 2ND ADDITION, LOCATED IN THE SOUTHWEST AND SOUTHEAST QUARTERS OF SECTION 12, TOWNSHIP 17 NORTH, RANGE 8 EAST OF THE 6TH P.M., DODGE COUNTY, NEBRASKA, AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHEAST CORNER OF OUTLOT "B" FREMONT TECHNOLOGY PARK 1ST ADDITION, SAID POINT BEING THE TRUE POINT OF BEGINNING; THENCE S02°23'55"E, SOUTHERLY ON AN EAST LINE OF SAID OUTLOT "B", A DISTANCE OF 1,217.00' TO THE SOUTHEAST CORNER OF SAID OUTLOT "B"; THENCE S88°00'22"W, ON A SOUTH LINE OF SAID OUTLOT "B", A DISTANCE OF 330.02' TO A SOUTH CORNER OF SAID OUTLOT "B"; THENCE S87°57'07"W, ON A SOUTH LINE OF SAID OUTLOT "B", A DISTANCE OF 1,048.83' TO A SOUTHWEST CORNER OF SAID OUTLOT "B"; THENCE N02°24'39"W, ON A WEST LINE OF SAID OUTLOT "B", A DISTANCE OF 684.79' TO A SOUTHWEST CORNER OF SAID OUTLOT "B"; THENCE S87°35'21"W, ON A SOUTH LINE OF SAID OUTLOT "B", A DISTANCE OF 230.00' TO A SOUTHWEST CORNER OF SAID OUTLOT "B"; THENCE N02°24'39"W, ON A WEST LINE OF SAID OUTLOT "B", A DISTANCE OF 64.89' TO A SOUTHWEST CORNER OF SAID OUTLOT "B"; THENCE S87°33'40"W, ON A SOUTH LINE OF SAID OUTLOT "B", A DISTANCE OF 65.00' TO A SOUTHWEST CORNER OF SAID OUTLOT "B"; THENCE N02°24'39"W, ON A WEST LINE OF SAID OUTLOT "B", A DISTANCE OF 244.47' TO A WEST CORNER OF SAID OUTLOT "B"; SAID CORNER BEING THE SOUTHEAST CORNER OF OUTLOT "A" FREMONT TECHNOLOGY PARK 2ND ADDITION; THENCE S87°34'00"W, ON A SOUTH LINE OF SAID OUTLOT "A", A DISTANCE OF 619.69' TO THE SOUTHWEST CORNER OF SAID OUTLOT "A"; THENCE N02°14'08"W, ON A WEST LINE OF SAID OUTLOT "A", A DISTANCE OF 229.11' TO THE NORTHWEST CORNER OF SAID OUTLOT "A"; THENCE N87°58'31"E, ON A NORTH LINE OF SAID OUTLOT "A" AND A NORTH LINE OF SAID OUTLOT "B", A DISTANCE OF 1,962.62' TO A NORTH CORNER OF SAID OUTLOT "B"; THENCE N87°54'11"E, ON A NORTH LINE OF SAID OUTLOT "B", A DISTANCE OF 330.49' TO THE POINT OF BEGINNING, SAID TRACT CONTAINS A CALCULATED AREA OF 1,971,247.74 SQUARE FEET OR 45.25 ACRES, MORE OR LESS.

## SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT I HAVE MADE A GROUND SURVEY OF THE SUBDIVISION DESCRIBED HEREIN AND THAT PERMANENT MONUMENTS HAVE BEEN PLACED AT ALL CORNERS OF LOTS, ANGLE POINTS AND ENDS OF CURVES IN FREMONT TECHNOLOGY PARK 3RD ADDITION, A SUBDIVISION LOCATED IN THE SOUTHWEST AND SOUTHEAST QUARTERS OF SECTION 12, TOWNSHIP 17 NORTH, RANGE 8 EAST OF THE 6TH P.M., CITY OF FREMONT, DODGE COUNTY, NEBRASKA.

DATE: JUL 14, 2021  
ANDREW BROEKER  
OLSSON INC.  
601 P STREET, SUITE 200  
LINCOLN, NE 68508

## DEDICATION

KNOW ALL MEN BY THESE PRESENTS: THAT THE CITY OF FREMONT, DODGE COUNTY, NEBRASKA, BEING THE OWNER AND PROPRIETOR OF THE PROPERTY DESCRIBED WITHIN THE LEGAL DESCRIPTION AND EMBRACED WITHIN THIS PLAT, HAS CAUSED SAID LAND TO BE PLATTED INTO FOURTEEN (19) LOTS AND ONE (1) OUTLOT, TO BE NAMED AND NUMBERED AS SHOWN, SAID PLAT TO BE HEREAFTER KNOWN AS "FREMONT TECHNOLOGY PARK 3RD ADDITION"; SAID OWNER HEREBY RATIFIES AND APPROVES OF THE DISPOSITION OF THEIR PROPERTY, AS SHOWN ON THIS PLAT; SAID OWNER GRANTS UTILITY EASEMENTS AT THE LOCATIONS AND WIDTHS SHOWN ON THIS PLAT, WE HEREBY DEDICATE TO THE PUBLIC FOR PERPETUAL PUBLIC USE THE STREETS TO BE KNOWN AS EAST 29TH STREET, NORTH LINCOLN AVENUE, AT THE LOCATIONS SHOWN AND TO THE WIDTHS SHOWN HEREON, WE DO ALSO GRANT EASEMENTS TO THE CITY OF FREMONT, SAID EASEMENTS ARE RESERVED FOR THE USE OF PUBLIC UTILITIES, AND ARE SUBJECT TO THE PARAMOUNT RIGHT OF THE PUBLIC UTILITY TO INSTALL, REPAIR, REPLACE AND MAINTAIN ITS INSTALLATIONS.

BY: CITY OF FREMONT, DODGE COUNTY NEBRASKA

BY: \_\_\_\_\_

NAME: JOEY SPELLERBERG  
TITLE: MAYOR

## ACKNOWLEDGMENT OF NOTARY

STATE OF NEBRASKA }  
DODGE COUNTY } SS

ON THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_, THE UNDERSIGNED, A NOTARY PUBLIC, PERSONALLY CAME JOEY SPELLERBERG, MAYOR, CITY OF FREMONT, DODGE COUNTY, NEBRASKA.

NOTARY PUBLIC

## CITY OF FREMONT PLANNING COMMISSION APPROVAL

THIS PLAT OF "FREMONT TECH PARK 3RD ADDITION" HAS BEEN SUBMITTED TO AND APPROVED BY THE CITY OF FREMONT PLANNING COMMISSION AND IS HEREBY TRANSMITTED TO THE CITY COUNCIL OF FREMONT, NEBRASKA, WITH THE RECOMMENDATION THAT THIS PLAT BE APPROVED AS PROPOSED.

DATED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_.

CITY OF FREMONT PLANNING COMMISSION:

CHAIRPERSON

SECRETARY

## FREMONT TECHNOLOGY PARK 3RD ADDITION

REVISIONS

REV. NO. DATE DESCRIPTION

REVISIONS

REVISIONS

REVISIONS

REVISIONS

REVISIONS

REVISIONS

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REVISIONS

REVISIONS

drawn by: ALB  
checked by: \_\_\_\_\_  
approved by: \_\_\_\_\_  
QA/QC by: DT  
project no.: 018-1554  
drawing no.: \_\_\_\_\_  
date: 7/14/2021

SHEET  
1 of 1

olsson

601 P Street, Suite 200  
P.O. Box 94008  
Lincoln, NE 68508

TEL 402.474.6311  
www.olsson.com

## STAFF REPORT

**TO:** Planning Commission

**FROM:** Jody Sanders, Director of Finance

**DATE:** July 19, 2021

**SUBJECT:** Review of City's Five-year Capital Improvement Plan (CIP)

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**Recommendation:** Review and adopt Five-year Capital Improvement Plan, (improvements only.)

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**Background:** Nebraska Revised Statute 19-929 states in part, "...T[t]he planning commission of a city of the first class, city of the second class, or village shall (a) make and adopt plans for the physical development of the city or village, including any areas outside its boundaries which in the commission's judgment bear relation to the planning of such city or village and including a comprehensive development plan as defined by section 19-903, (b) prepare and adopt such implemental means as a capital improvement program, subdivision regulations, building codes, and a zoning ordinance in cooperation with other interested municipal departments, and (c) consult with and advise public officials and agencies, public utilities, civic organizations, educational institutions, and citizens with relation to the promulgation and implementation of the comprehensive development plan and its implemental programs."

The City's Five-year CIP (improvements only) follows for your review and adoption. We have eliminated equipment requests from this report, and are only reporting on improvements to property. Please further note that not all requests recorded here have funding sources identified, so not everything in this report will be included in the two-year budget. While City staff continues to sort through funding sources, and the City Council has yet to approve the appropriations as requested, we thought it prudent to provide the Commission the complete report to receive approval of the requests.

The Commission's task is to review the CIP to determine that the requests are in compliance with the City's Comprehensive Plan and provide for orderly development within the City and its extra territorial jurisdiction.

**Fiscal Impact:** As noted on the attached reports.

CAPITAL PLAN  
CITY OF FREMONT, NEBRASKA  
FY 2022-2026  
Draft 6/29/2021

(2) PROJECT PRIORITY

- A - Urgent
- B - Necessary
- C - Desirable

FUNDING SOURCE CODES:

- CD Comm Dev Funds
- GDS Go Bonds sold
- SBB Street Buyback
- TI Trade In
- BBB Bridge Buyback

- NBR State Revenues
- ST55 Sales Tax Public Safety
- GT Gas Tax Revenues
- AS Assessments
- FA Federal & State Grants

- PSB Public Safety Bonds
- OF Other Funds
- 3AA Federal Highway Funds
- ST58 Sales Tax-Street
- K Keno Funds
- PST Public Safety Tax Anticipation Bonds

- HAB Highway Allocation Bonds
- W911 Wireless E911 Funds
- CP Council Priorities
- RES Reserves
- COM Committed Capital Funds
- SWMP Storm water mngmt plan

(0) PROJ. NO.	Dept.	(1) PROJECT TITLE & DESCRIPTION	(2) PROJECT PRIORITY	(3) TOTAL EST.PROJ. COST	(4) OUTSIDE FUNDS & SOURCES	(5) LOCAL FUNDS & SOURCES															
							10/1/20-9/30/21		10/1/21-9/30/22		10/1/22-9/30/23		10/1/23-9/30/24		10/1/24-9/30/25		10/1/25-9/30/26				
							FY 21 2020-2021		FY 22 2021-2022		FY 23 2022-2023		FY 24 2023-2024		FY 25 2024-2025		FY 26 2025-2026				
General Fund:																					
City Council	CC	Council Chamber AV		0		0			FA	250,000											
				250,000		250,000															
Sanitation	WT	Construction Trailer	A	0		0															
				25,000	25,000																
	WT	Replace scale	A	164,000		164,000	RES	79,000			RES	85,000									
Fire	Fire	New Fire Station and/or new addition to the current fire station				0										PSB					
					0																
					0																
Police	Pol	Generator (Cost Share w/ E911)	B	50,000		50,000	COM	0	COM	50,000											
		Elevator Renovation		80,000	80,000																
		Window Sill Replacement		50,000	50,000							COM	80,000								
		Restroom Construction		100,000	100,000							COM	50,000								
		Line-Up Area & Old Comm. Ctr Remodel		0	0							COM	100,000								
		HVAC Replaced		650,000	650,000																
		Roof Replacement & Design		175,000	175,000							COM	650,000								
		Roof Replacement & Design		0	0																
		Showers/Locker Room		400,000	400,000									COM	400,000						
		Flooring Replacement		70,000	70,000																
		Joint Law Enforcement Center		A		16,200,000					PST	5,000,000	PST	70,000	PST		COM				
		Purchase Tech Park Land											PST	5,000,000	PST						
Addition & Complete Renovation of Bldg		8,300,000	RB	8,300,000			ST 55	201,300													
Repaving of Parking Lot	C	80,000		80,000			ST 55		ST 55	80,000											
Civil Defense	CV	Warning Sirens (5)	B			0															
				275,000	275,000			FR	145,000												
Facilities	Fac	CF Main Arena - Energy Efficiencies Project	B/C			0															
				565,000	565,000	RES	565,000														
				Senior Center - Energy Efficiencies Project	B/C	373,637	373,637	FR	373,637												
				New building siding for CF Indoor Horse	B/C	60,000	60,000			FR	60000										
				Concrete Pads Behind CF Main Arena /	C	28,000	28,000					FR	28,000								
				Asphalt between Barns at CF	B/C	85,000	85,000					FR	85,000								
				Covered runway between CF Horse Bar	C	80,000	80,000							FR	80,000						
Parks	Park	Replace restroom Ruwe Park	B	85,000		85,000			K	85,000											
				Replace Davenport Shelter	A	50,000	50,000			K	50,000										
				Ronin Irrigation	C	21,175	21,175			K	21,175										

CAPITAL PLAN  
CITY OF FREMONT, NEBRASKA  
FY 2022-2026  
Draft 6/29/2021

(2) PROJECT PRIORITY  
A - Urgent  
B - Necessary  
C - Desirable

FUNDING SOURCE CODES:				PSB	Public Safety Bonds	HAB	Highway Allocation Bonds
CD	Comm Dev Funds	NBR	State Revenues	OF	Other Funds	W911	Wireless E911 Funds
GDS	Go Bonds sold	ST55	Sales Tax Public Safety	3AA	Federal Highway Funds	CP	Council Priorities
SBB	Street Buyback	GT	Gas Tax Revenues	ST58	Sales Tax-Street	RES	Reserves
TI	Trade In	AS	Assessments	K	Keno Funds	COM	Committed Capital Funds
BBB	Bridge Buyback	FA	Federal & State Grants	PST	Public Safety Tax Anticipation Bonds	SWMP	Storm water mngmt plan

(0) PROJ. NO.	Dept.	(1) PROJECT TITLE & DESCRIPTION	(2) PROJECT PRIORITY	(3) TOTAL EST.PROJ. COST	(4) OUTSIDE FUNDS & SOURCES	(5) LOCAL FUNDS & SOURCES	10/1/20-9/30/21		10/1/21-9/30/22		10/1/22-9/30/23		10/1/23-9/30/24		10/1/24-9/30/25		10/1/25-9/30/26	
							FY 21		FY 22		FY 23		FY 24		FY 25		FY 26	
							2020-2021		2021-2022		2022-2023		2023-2024		2024-2025		2025-2026	
Ronin	Park	Memorial Ball Field fence replacement	A	16,000		16,000			FR	16,000								
	Park	Irrigation System for Johnson Park, Pha	B	20,000		20,000			FR	20,000								
	Park	Irrigation system for Davenport Park	B	14,000		14,000			FR	14,000								
	Park	Masonic Irrigation	C	23,100		23,100					K	23,100						
	Park	Replace restroom Van Anda Park	B	85,000		85,000					K	85,000						
	Park	Replace restroom Barnard Park	B	85,000		85,000					K	85,000						
	Park	Neighborhood Park Splash Pad	A	90,000		90,000					K	90,000						
	Park	Davenport Irrigation	C	19,250		19,250	K	0			K	19,250						
	Park	Agri Lime Ronin Ball Field Infield	A	40,000		40,000					FR	40,000						
	Park	Agri Lime Field #1 Infield at CF	A	40,000		40,000					FR	40,000						
	Park	Irrigation system for Ronin Park / Ballfie	B	20,000		20,000					FR	20,000						
	Park	New irrigation system for Masonic Park	B	14,000		14,000					FR	14,000						
	Park	Bleachers and pads for CF Soccer Field	C	45,000		45,000					FR	45,000						
	Park	Replace Dugouts at Ronin	B	20,000		20,000					FR	20,000						
	Park	Milliken Park Restroom/Shelter	A	120,175		120,175							K	120,175				
	Park	Replace restroom Ronin Park	B	85,000		85,000			K	0			K	85,000				
	Park	New playground equipment for Buch Pa	A	90,000		90,000							FR	90,000				
	Park	Irrigation system for Miller Ball Fields	B	20,000		20,000							FR	20,000				
	Park	New irrigation system for Van Anda Parl	B	10,000		10,000							FR	10,000				
	Park	Replace Dugouts at Memorial	B	40,000		40,000							FR	40,000				
	Park	New sidewalk west & north side of Clem	A	20,000		20,000									FR	20,000		
	Park	New Splash Pad at Clemmons Park	B	150,000		150,000									FR	150,000		
	Park	New restroom for JCF Park	A	120,000		120,000									FR	120,000		
	Park	Replace Dugouts at Davenport	B	20,000		20,000									FR	20,000		
	Park	West extension of CF Indoor Horse Are	C	150,000		150,000											FR	150,000
	Park	New Restroom for Davenport Park	B	85,000		85,000											FR	85,000
	Park	New Splash Pad at Davenport Park	A	120,000		120,000											FR	120,000
				0		0												
				0		0												
	Ronin	Sandblast and Paint Pool Tub	A	63,000		63,000	K	30,000										33,000
	Ronin	Caulk Pool Joints	A	16,000		16,000	FR	16,000										
	Ronin	Replace Diving Boards	A	35,000		35,000	K	35,000										
	Ronin	Replace Lockers	B	10,000		10,000			K	10,000								
	Ronin	Udpate Bath Houses	B	50,000		50,000					K	50,000						
				0		0												
				0		0												
	Splash	Paint Train Slide	A	37,000		37,000	K	37,000										
	Spl	Refurbish / Paint Slides	A	37,000		37,000	K	37,000										
	Spl	Replace Boiler	A	35,000		35,000	K	35,000										
	Spl	Caulk Joints	A	20,000		20,000	FR	20,000										
	Spl	Sandblast / Repaint Tub	A	75,000		75,000			K	75,000								
	Spl	Paint Interior of Bathhouse	A	50,000		50,000					K	50,000						
				0		0												
	Cemetery																	
	Cem	Kiosk	B	65,000	25000.00	40,000	K	40,000										
	Cem	Cemetery Office	B	190,000	OF 20,000	170,000			FR	170,000								
Street Fund:								0		0		0		0		0		0



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FY 2022-2026  
Draft 6/29/2021

(2) PROJECT PRIORITY  
A - Urgent  
B - Necessary  
C - Desirable

FUNDING SOURCE CODES:				PSB    Public Safety Bonds				HAB    Highway Allocation Bonds			
CD	Comm Dev Funds	NBR State Revenues		OF Other Funds		W911 Wireless E911 Funds		CP Council Priorities		RES Reserves	
GDS	Go Bonds sold	ST55 Sales Tax Public Safety		3AA Federal Highway Funds		COM Committed Capital Funds		SWMP Storm water mngmt plan			
SBB	Street Buyback	GT Gas Tax Revenues		ST58 Sales Tax-Street							
TI	Trade In	AS Assessments		K Keno Funds							
BBB	Bridge Buyback	FA Federal & State Grants		PST Public Safety Tax Anticipation Bonds							

(0) PROJ. NO.	Dept.	(1) PROJECT TITLE & DESCRIPTION	(2) PROJECT PRIORITY	(3) TOTAL EST.PROJ. COST	(4) OUTSIDE FUNDS & SOURCES	(5) LOCAL FUNDS & SOURCES	10/1/20-9/30/21		10/1/21-9/30/22		10/1/22-9/30/23		10/1/23-9/30/24		10/1/24-9/30/25		10/1/25-9/30/26	
							FY 21 2020-2021		FY 22 2021-2022		FY 23 2022-2023		FY 24 2023-2024		FY 25 2024-2025		FY 26 2025-2026	
P14812	Str Str	Multi Use Building		8,000,000		0	OF	4,000,000		RES	4,000,000							
	Street Improvement																	
	St Im	Luther Rd South of Morningside	B	1,160,000		1,160,000	ST 58	410,000				ST 58	750,000					
	St Im	Johnson Rd, Morningside-Fremont Dr Construction	A	1,300,000		1,300,000												
				411,000		411,000												
	St Im	Johnson Rd, Morningside-Fremont Dr Construction Supervision	A	25,000		25,000												
	St Im	Bell St & Hickory Rawhide drainage	A	105,000		105,000												
	St Im	Bell Street Overlay, Linden to 23rd, Construction	A	575,000		575,000												
	St Im	Bell Street Overlay, Linden to 23rd, Construction Inspection	A	15,000		15,000												
	St Im	Bell Street Viaduct Rehab Engineering	B	0		0												
	St Im	Bell Street Viaduct Rehab, Construction	B	200,000		200,000	ST 56	200,000										
							SBB	300,000										
	St Im	Fremont Tech Park, 32nd Street and Lincoln Rd, Engineering	B	0		0												
	St Im	Fremont Tech Park, 32nd Street	B	750,000		750,000	ST 59	750,000										
	St Im	Stormwater Masterplan Projects	A	200,000		200,000	SWMP	50,000	SWMP	25,000	SWMP	25,000	SWMP	25,000	SWMP	25,000	SWMP	25,000
P15213	St Im	Fremont Tech Park Construction	C	0		0												
	St Im	29th St Return																
	St Im	Railroad Quiet Zones Engineering	B	0		0												
	St Im	Railroad Quiet Zones Construction	B	1,600,000		1,600,000	ST58	100,000	ST58	900,000	ST 58	600,000						
	St Im	Mayfair, 16th-19th Reconstruction	B	550,000		550,000			ST58	550,000								
P15113	St Im	Garfield Street, 16th to 19th	B	550,000		550,000					ST58	550,000						
	St Im	W 19th St, Nye-Somers Construction	C	125,000		125,000			ST 58	125,000								
	St Im	Pierce St, 11th-Linden	B	450,000		450,000					SBB	450,000						
P14612	St Im	Intersection reimbursements to Subdivisions	A	1,000,000		1,000,000	GT	200,000	GT	200,000	GT	200,000	GT	200,000				
	St Im	16th St - Nye to Colson Resurfacing	C	100,000		100,000	ST58	100,000										
	St Im	Military Road, Luther to Johnson	B	1,075,000		1,075,000	ST 58	0	ST 58	75,000	ST 58	1,000,000						
P14812	St Im	Iowa Street, Wyoming to Colorado	C	0		0	SBB	0										
	St Im	5th Street, H to K Street	B	300,000		300,000	GT	0	GT	300,000								
	St Im	20th St, Nye-H Str Construction	C	250,000		250,000	ST58	0	ST 58	250,000								
	St Im	Broad Street 8th to 23rd, (Engineering)		75,000		75,000			ST 58	75,000								
	St Im	Broad Street 8th to 23rd, (Construction)		800,000		800,000					ST 58	800,000						

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FUNDING SOURCE CODES:

- CD Comm Dev Funds
- GDS Go Bonds sold
- SBB Street Buyback
- TI Trade In
- BBB Bridge Buyback

- NBR State Revenues
- ST55 Sales Tax Public Safety
- GT Gas Tax Revenues
- AS Assessments
- FA Federal & State Grants

- PSB Public Safety Bonds
- OF Other Funds
- 3AA Federal Highway Funds
- ST58 Sales Tax-Street
- K Keno Funds
- PST Public Safety Tax Anticipation Bonds

- HAB Highway Allocation Bonds
- W911 Wireless E911 Funds
- CP Council Priorities
- RES Reserves
- COM Committed Capital Funds
- SWMP Storm water mngmt plan

(0) PROJ. NO.	Dept.	(1) PROJECT TITLE & DESCRIPTION	(2) PROJECT PRIORITY	(3) TOTAL EST.PROJ. COST	(4) OUTSIDE FUNDS & SOURCES	(5) LOCAL FUNDS & SOURCES											10/1/24-9/30/25		10/1/25-9/30/26	
							10/1/20-9/30/21		10/1/21-9/30/22		10/1/22-9/30/23		10/1/23-9/30/24		10/1/24-9/30/25		10/1/25-9/30/26			
							FY 21 2020-2021		FY 22 2021-2022		FY 23 2022-2023		FY 24 2023-2024		FY 25 2024-2025		FY 26 2025-2026			
P15313	St Im	Clarkson Street 8th to 23rd, (Engineering)		75,000		75,000			ST 58	75,000										
	St Im	Clarkson Street 8th to 23rd, (Engineering)		800,000		800,000					ST 58	800,000								
	St Im	Ridge Rd & Jones St Box Culvert		100,000		100,000			ST 56	0	ST 56	100,000								
	St Im	Reynolds Road Reconstruction Construction		350,000		350,000			ST58	0			ST 58	350,000						
P15713	St Im	32nd St, Yager-Luther Engineering	B	100,000		100,000	ST58	100,000												
P15713	St Im	32nd St, Yager-Luther Construction	B	2,000,000		2,000,000			ST58	0	ST 58	2,000,000								
D10502	St Im	Signal Repair, 23rd Street	A	600,000		600,000	ST 56	200,000	ST 56	200,000	ST 56	200,000								
	St Im	Annual Street Reconstruction	A	1,100,000		1,100,000	SBB	220,000	SBB	220,000	SBB	220,000	SBB	220,000						
	St Im	Fremont Flood Mitigation Feasibility Study	A	100,000		100,000	ST 56	25,000	ST 56	25,000	ST 56	25,000	ST 56	25,000						
		Levee Maintenance	A	200,000		200,000	ST 56	50,000	ST 56	50,000	ST 56	50,000								
WF72		Downtown Alleys	B	800,000		800,000	ST 56	200,000	ST 56	200,000	ST 56	200,000	ST 56	200,000						
	St Im	Open Ditch Drainage Rehab Construction	B	500,000		500,000	ST56	200,000	ST56	100,000	ST56	100,000	ST56	100,000						
	St Im	23rd/Linden Viaduct Engineering	B	0		0	ST 56	0												
	St Im	23rd/Linden Viaduct ROW Acquisition	B	0		0	Bonds	0												
WF72	St Im	23rd/Linden Viaduct Construction	B	13,500,000	13,500,000	0	HAB	0	HAB	0										
P17819	St Im	Levee Construction Repairs	A	125,000		125,000	FA	50,000	FA	25,000	FA	25,000	FA	25,000						
				0		0														
	St Im	SE Beltway	A	16,872,000		6,660,000														
						1,111,000	GT	462,000	GT	212,000										
P15413						9,101,000	OF	371,333	OF	583,334	OF	750,000								
						0														
	St Im	Bell St/Yager Alignment Engineering	B	100,000		100,000			ST 58	100,000										
	St Im	Bell St/Yager Alignment ROW Acquisition	B	5,000,000		5,000,000					ST 58	5,000,000								
P15413	St Im	Bell St/Yager Alignment Construction	B	10,000,000		10,000,000							ST 58	10,000,000						
	St Im	Luther Road, Military-23rd Street Engineering	C	252,000		100,000	ST58	0	ST 58	100,000										
					FA	152,000			FA	152,000										
	St Im	Luther Road, Military-23rd Street Construction	C	2,000,000		400,000					ST58	400,000								
P15513	St Im	1st St Reconst, Bell-Luther Road Engineering		197,000		45,000	FA	152,000			FA	1,600,000								
P15513					FA	152,000			ST58	45,000										
	St Im	1st St Reconst, Bell-Luther Road Construction		2,128,000		2,000,000			FA	152,000			ST58	2,000,000						
					FA	128,000					FA	128,000								
	St Im	1st St Reconst, Bell-Main Engineering		227,000		75,000			ST58	75,000										
					FA	152,000			FA	152,000										



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							FY 21 2020-2021		FY 22 2021-2022		FY 23 2022-2023		FY 24 2023-2024		FY 25 2024-2025		FY 26 2025-2026	
	St Im	1st St Reconst, Bell-Main Construction		1,128,000	FA 128,000	1,000,000					ST58 1,000,000							
	St Im	Military Ave, Johnson-Hwy 275 Engineering		100,000		100,000					FA 128,000							
	St Im	Military Ave, Johnson-Hwy 275 Construction		2,000,000		2,000,000							ST58 2,000,000					
	St Im	Broad & Military Ave Intersection Construction		820,000		500,000							ST58 500,000					
					FA 320,000								FA 320,000					
Airport Fund:																		
	Air	Construct New Terminal Building	A	3,240,000		1,240,000	RES 2,000,000											
						2,000,000	RES											
	Air	Construct New Terminal Area Apron	A	50,000		50,000												
	Air	Terminal Furnishings	A	50,000		50,000			FR 50,000									
	Air	Crack Sealing/Paint Markings	A	157,000		40,000			FR 40,000									
						117,000			FA 117,000									
	Air	Taxiway A Extention Engineering	A	200,000		200,000			FR 200,000									
	Air	Terminal Hangar, Engineering	B	40,000		40,000			FR 40,000									
	Air	Runway Rehabilitation, Eng.	A	50,000		50,000			FR 50,000									
	Air	Taxiway A Extention Construction	A	4,000,000		4,000,000					FR 4,000,000							
	Air	Update ALP	A	635,000		350,000					FR 350,000							
						285,000					FA 285,000							
	Air	Rehabilitate Existing Apron and Asphalt	A	375,000		375,000					FR 375,000							
	Air	Runway Rehabilitation, Const	A	100,000		100,000					FR 100,000							
	Air	Terminal Hangar, Construction	B	2,500,000		2,500,000								FR 2,500,000				
Special Projects Fund:																		
R14410	S P	Rawhide Trail ROW Acquisition	A	1,120,000		672,000	ST 56 112,000		ST 56 560,000									
						448,000	FA 448,000											
R14410	S P	Rawhide Trail Construction	A	1,875,000		1,127,000	ST 56 187,000		ST 56 940,000									
						748,000	FA 748,000		FA 748,000									
R14410	SP	Rawhide Trail Engineering		1,030,000		615,000	ST 56 105,000		ST 56 510,000									
						415,000	FA 415,000											
D12321	S P	FFRDD Levee Construction Repairs	A	510,000		382,500	FA 191,250		FA 191,250									
						127,500	FR 63,750		FR 63,750									
	SP	Hormel Park boat ramp		450,000		337,500	FA 168,750		FA 168,750									
						112,500	FR 56,250		FR 56,250									
D12421	SP	FFRDD Levee Extension		79,920		79,920	FA 39,960		FA 39,960									
Improvements Fund:																		
	Imp	District Improvements	A	1,500,000		1,500,000	FR 750,000											

## **STAFF REPORT**

**TO:** Planning Commission

**FROM:** Don Simon, Chief Building Inspector/CFM

**DATE:** June 7, 2021

**SUBJECT:** Amend Chapter 9 of the Municipal Code to adopt the 2018 ICC Code Cycles as described.

<b>Recommendation:</b> Recommend approval to City Council
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### **Background:**

Review and Consider amendments to Chapter 9 of the Fremont Municipal Code relating to the 2018 International Code Council (ICC) series of code books with the 2018 International Building Code, 2018 International Residential Code, 2018 International Existing Building Code, 2018 Uniform Plumbing Code, 2018 Uniform Mechanical Code, 2018 International Fuel Gas Code, 2018 International Energy Conservation Code, and the 2018 International Property Maintenance Code.

1. **Discuss significant changes to the IRC or other codes above.**
  - A. **Discuss 2-hour fire wall method in new code to what we have in ordinance now.**
2. **Consider new Drain Tile method.**

### **Additional items to ordinance:**

3. **All commercial plans must first be submitted to the State Fire Marshall prior to permitting and also checked with State Architect and Engineering for professional stamp requirements.**
4. **Add language to Licensing testing allowing plumbing and mechanical testing again.**

- 5. Discuss the 2018 International Energy Conservation Code as it applies to duct work and insulation.**
- A. Delete Blower Door Test**
  - B. Amend the duct testing to provide the option of adding spray foam insulation to ductwork located in the unconditioned space in lieu of sealing and then testing the ductwork. The rationale is that the cost of associated with testing the ductwork is comparable to the application of spray foam around the ductwork in the cold attic space.**
  - C. Wall cavities may be used as duct or plenum if completely panned and sealed.**
  - D. Mandatory requirement for mechanical ventilations has been deleted.**
  - E. Basement wall need to be insulated with R13 in lieu of R15 or R19.**

**Fiscal Impact none:** None

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## **2018Sec. 9-101. Adoption of codes and amendments as related to this title.**

The following editions of the below named codes, are adopted with amendments and revisions as set forth herein:

International Building Code (IBC) - ~~2015~~2018Edition: Chapters 1—26, Chapters 30—35, and Appendices C, G, I, and J.

International Fire Code - ~~2015~~2018 Edition: All Chapters and Appendix D.

International Residential Code (IRC) - ~~2015~~2018 Edition: Chapters 1—10, Chapters 43—44, and Appendices E, F, H, and I.

NFPA 70: National Electrical Code (NEC) - 2017 Edition: All Chapters.

International Existing Building Code (IEBC) - ~~2015~~2018 Edition: All Chapters.

Uniform Mechanical Code (UMC) - ~~2015~~2018 Edition: All Chapters.

Uniform Plumbing Code (UPC) - ~~2015~~2018 Edition: All Chapters.

International Fuel Gas Code (IFGC) - ~~2015~~2018 Edition: All Chapters.

International Property Maintenance Code (IPMC) - ~~2015~~2018 Edition: All Chapters.

International Energy Conservation Code (IECC) - ~~2009~~ 2018-Edition: All Chapters.

## **Sec. 9-102. Amendments.**

The City Council may, from time to time, by ordinance adopt amendments and revisions to the above enumerated codes. Copies of each of the above adopted codes, and any additional building regulations or codes adopted hereafter, shall be maintained in the office of the city clerk for inspection. Copies of amendments or revisions to the above enumerated codes shall also be maintained in the office of the city clerk for inspection. Any reference to the aforementioned codes shall be considered as inclusive of any amendments made thereto.

## **ARTICLE 2. BUILDING CODE.**

### **Sec. 9-201. International Building Code adopted.**

The International Building Code, ~~2015~~2018 edition: Chapters 1-26, Chapters 30-35, and Appendices C, G, I, and J, as recommended by the International Code Council (ICC), and herein adopted by the City of Fremont is hereby amended to include the following local amendments.

### **Sec. 9-202. City of Fremont local amendments.**

- (a) *Section [A]105.2 Work exempt from permit;* amend building exemption number 1 to read as follows:
  - 1. One-story detached accessory structures used as tool and storage sheds, playhouses and similar uses, provided the floor area does not exceed 80 square feet (7.43 m2).
- (b) *Section [A]105.2 Work exempt from permit;* amend building exemption number 2 to read as follows:
  - 2. Fences not over 30 inches (762mm) high.
- (c) *Section [A]105.2 Work exempt from permit;* amend building exemption number 7 to read as follows:

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7. Painting, papering, tiling, carpeting, counter tops and similar finish work.

(d) *Section [A] 105.2 Work exempt from permit*; strike electrical, gas, mechanical, and plumbing exemptions.

(e) *Section [A]105.3 Application for permit*; amend to read as follows:

**[A] 105.3 Application for permit.** To obtain a permit, the applicant shall first file an application therefor in writing on a form furnished by the department of building safety for that purpose. Such application shall:

1. Identify and describe the work to be covered by the permit for which application is made.
2. Describe the land on which the proposed work is to be done by legal description, street address or similar description that will readily identify and definitely locate the proposed building or work.
3. Indicate the use and occupancy for which the proposed work is intended.
4. Be accompanied by construction documents and other information as required in Section 107.
5. State the valuation of the proposed work.
6. Be signed by the applicant, or the applicant's authorized agent. Give such other data and information as required by the building official.
7. Be accompanied by approved plan review from the Nebraska State Fire Marshall's office **and approval of the State Architect and Engineer's Board.**

(f) *Section 406.3.4 Separation*; amend scenario 1 to read as follows:

1. The private garage shall be separated from the dwelling unit and its attic area by means of gypsum board, not less than 5/8 inch (15.9 mm) in thickness, applied to the garage side. Garages beneath habitable rooms shall be separated from all habitable rooms above by not less than a 5/8 inch (15.9 mm) Type X gypsum board or equivalent and 5/8 inch (15.9 mm) gypsum board applied to structures supporting the separation from habitable rooms above the garage. Door openings between a private garage and the dwelling unit shall be equipped with either solid wood doors or solid or honeycomb core steel doors not less than 1 3/8 inches (34.9 mm) in thickness, or doors in compliance with Section 716.5.3 with a fire protection rating of not less than 20 minutes. Openings from a private garage directly into a room used for sleeping purposes shall not be permitted. Doors shall be self-closing and self-latching.

(g) *Section 1612.3 Establishment of flood hazard areas*, amend to read as follows:

**1612.3 Establishment of flood hazard areas.** To establish flood hazard areas, the applicable governing authority shall adopt a flood hazard map and supporting data. The flood hazard map shall include, at a minimum, areas of special flood hazard as identified by the Federal Emergency Management Agency in an engineering report entitled "The Flood Insurance Study for City of Fremont, Nebraska," dated August, 1978, as amended or revised with the accompanying Flood Insurance Rate Map (FIRM) and Flood Boundary and Floodway Map (FBFM) and related supporting data along with any revisions thereto. The adopted flood hazard map and supporting data are hereby adopted by reference and declared to be part of this section.

(h) *Section 1809.5. Frost Protection*; amend exception 2 to read as follows:

2. Area of 400 square feet (37 m2) or less; and

(i) *Table 1809.7 Prescriptive Footings Supporting Walls Of Light- Frame Construction*; amend to read as follows:

TABLE 1809.7 PRESCRIPTIVE FOOTINGS SUPPORTING WALLS OF LIGHT-FRAME CONSTRUCTION<sup>a, b, c, d, e</sup>



Number of Floors Supported By The Footing <sup>f</sup>	Width of Footings (inches)	Thickness of Footings (inches)
1	16	8
2	20	10
3	24	12

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

- a. Depth of footings shall be in accordance with Section 1809.4.
- b. The ground under the floor shall be permitted to be excavated to the elevation of the top of the footing.
- c. Interior stud-bearing walls shall be permitted to be supported by isolated footings. The footing width and length shall be twice the width shown in this table, and footings shall be spaced not more than 6 feet on center.
- d. See Section 1905 for additional requirements for concrete footings of structures assigned to Seismic Design Category C, D, E or F.
- e. For thickness of foundation walls, see Section 1807.1.6.
- f. Footings shall be permitted to support a roof in addition to the stipulated number of floors. Footings supporting roof only shall be as required for supporting one floor.

(j) *Section 3103.1 General*; amend to read as follows:

**3103.1 General.** The provisions of Sections 3103.1 through 3103.4 shall apply to structures erected for a period of less than 180 days, between April 1 and October 31. Tents and other membrane structures erected for a period of less than 180 days shall comply with the International Fire Code. Those erected for a longer period of time shall comply with applicable sections of this code.

## **ARTICLE 3. FIRE CODE**

### **Sec. 9-301. International Fire Code adopted.**

The International Fire Code, ~~2015~~2018 edition: All Chapters and Appendix D, as recommended by the International Code Council (ICC), and herein adopted by the City of Fremont is hereby amended to include the following local amendments.

### **Sec. 9-302. City of Fremont local amendments.**

Reserved.

## **ARTICLE 4. RESIDENTIAL CODE**

### **Sec. 9-401. International Residential Code adopted.**

The International Residential Code, ~~2015~~2018 edition: Chapters 1-10, Chapters 43-44, and Appendices E, F, G, H, and I, as recommended by the International Code Council (ICC), and herein adopted by the City of Fremont is hereby amended to include the following local amendments.

### **Sec. 9-402. City of Fremont local amendments.**

(a) *Section R105.2 Work exempt from permit*; amend building exemption number 1 to read as follows:

1. One-story detached accessory structures used as tool and storage sheds, playhouses and similar uses, provided the floor area does not exceed 80 square feet (7.43 m2).
- (b) *Section R105.2 Work exempt from permit*; amend building exemption number 2 to read as follows:
2. Fences not over 30 inches (762 mm) high.
- (c) *Section R105.2 Work exempt from permit*; amend building exemption number 6 to read as follows:
6. Painting, papering, tiling, carpeting, counter tops and similar finish work.
- (d) *Section R105.2 Work exempt from permit*; amend building exemption number 7 to read as follows:
7. Prefabricated swimming pools that are less than 18 inches (457.2 mm) deep.
- (e) *Section R105.2 Work exempt from permit*; amend building exemption number 10 to read as follows:
10. Decks not exceeding 80 square feet (7.43 m2) in area, that are not more than 30 inches (762 mm) above grade at any point, are not attached to a dwelling and do not serve the exit door required by Section R311.4.
- (f) *Section R105.2 Work exempt from permit*; strike electrical, gas, and mechanical exemptions.
- (g) *Section R105.8 Responsibility*; amend to read as follows:
- R105.8 Responsibility.** It shall be the duty of every person who performs work for the installation or repair of building and structure systems, for which this code is applicable, to comply with this code.
- (h) *Table R301.2(1) Climatic And Geographic Design Criteria*; amend to read as follows:

**TABLE R301.2(1) CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA**

GROUND SNOW LOAD	WIND DESIGN					SUBJECT TO DAMAGE FROM						
	Speed <sup>d</sup> (mph)	Topographic effects <sup>k</sup>	Special Wind	Wind-borne	SEISMIC DESIGN CATEGORY	Weathering <sup>a</sup>	Frost line depth <sup>b</sup>	Termite <sup>c</sup>	WINTER DESIGN TEMP <sup>e</sup>	ICE BARRIER UNDER- LAYMENT RE QUIRED <sup>h</sup>	FLOOD HAZ- ARDS <sup>g</sup>	AIR FREEZING INDEX <sup>i</sup>
25lb LL	115 (55) EXPC	N/A	No	No	A	Severe	36"	Moderate to Heavy	-5	Yes	1978 1-2-08	2500

For SI: 1 pound per square foot = 0.0479 kPa, 1 mile per hour = 0.447 m/s.

<sup>a</sup> Weathering may require a higher strength concrete or grade of masonry than necessary to satisfy the structural requirements of this code. The weathering column shall be filled in with the weathering index (i.e., "negligible," "moderate" or "severe") for concrete as determined from the Weathering Probability Map [Figure R301.2(3)]. The grade of masonry units shall be determined from ASTM C 34, C 55, C 62, C 73, C 90, C 129, C 145, C 216 or C 652.

<sup>b</sup> The frost line depth may require deeper footings than indicated in Figure R403.1(1). The jurisdiction shall fill in the frost line depth column with the minimum depth of footing below finish grade.

<sup>c</sup> The jurisdiction shall fill in this part of the table to indicate the need for protection depending on whether there has been a history of local subterranean termite damage.

<sup>d</sup> The jurisdiction shall fill in this part of the table with the wind speed from the basic wind speed map [Figure R301.2(4)A]. Wind exposure category shall be determined on a site-specific basis in accordance with Section R301.2.1.4.

<sup>e</sup> The outdoor design dry-bulb temperature shall be selected from the columns of 97 1/2-percent values for winter from Appendix D of the International Plumbing Code. Deviations from the Appendix D temperatures shall be permitted to reflect local climates or local weather experience as determined by the building official.

<sup>f</sup>. The jurisdiction shall fill in this part of the table with the seismic design category determined from Section R301.2.2.1.

<sup>g</sup>. The jurisdiction shall fill in this part of the table with (a) the date of the jurisdiction's entry into the National Flood Insurance Program (date of adoption of the first code or ordinance for management of flood hazard areas), (b) the date(s) of the Flood Insurance Study and (c) the panel numbers and dates of all currently effective FIRMs and FBFMs or other flood hazard map adopted by the authority having jurisdiction, as amended.

<sup>h</sup>. In accordance with Sections R905.1.2, R905.4.3.1, R905.5.3.1, R905.6.3.1, R905.7.3.1 and R905.8.3.1, where there has been a history of local damage from the effects of ice damming, the jurisdiction shall fill in this part of the table with "YES." Otherwise, the jurisdiction shall fill in this part of the table with "NO."

<sup>i</sup>. The jurisdiction shall fill in this part of the table with the 100-year return period air freezing index (BF-days) from Figure R403.3(2) or from the 100-year (99 percent) value on the National Climatic Data Center data table "Air Freezing Index-USA Method (Base 32°F)."

<sup>j</sup>. The jurisdiction shall fill in this part of the table with the mean annual temperature from the National Climatic Data Center data table "Air Freezing Index-USA Method (Base 32°F)."

<sup>k</sup>. In accordance with Section R301.2.1.5, where there is local historical data documenting structural damage to buildings due to topographic wind speed-up effects, the jurisdiction shall fill in this part of the table with "YES." Otherwise, the jurisdiction shall indicate "NO" in this part of the table.

<sup>l</sup>. In accordance with Figure R301.2(4)A, where there is local historical data documenting unusual wind conditions, the jurisdiction shall fill in this part of the table with "YES" and identify any specific requirements. Otherwise, the jurisdiction shall indicate "NO" in this part of the table.

<sup>m</sup>. In accordance with Section R301.2.1.2.1, the jurisdiction shall indicate the wind-borne debris wind zone(s). Otherwise, the jurisdiction shall indicate "NO" in this part of the table.

(i) *Section R302.2 Townhouses*; amend to read as follows:

**R302.2 Townhouses.** Each townhouse shall be considered a separate building and shall be separated by a common 2-hour fire-resistance-rated wall assembly tested in accordance with ASTM E 119 or UL 263 if such walls do not contain plumbing or mechanical equipment, ducts or vents in the cavity of the common wall. The wall shall be rated for fire exposure from both sides and shall extend to and be tight against exterior walls and the underside of the roof sheathing. Electrical installations shall be installed in accordance with Chapters 34 through 43. Penetrations of electrical outlet boxes shall be in accordance with Section R302.4.

(j) *Section R302.3 Two-family dwellings*; amend to read as follows:

**R302.3 Two-family dwellings.** Dwelling units in two-family dwellings shall be separated from each other by wall and/or floor assemblies having not less than a 2-hour fire-resistance rating when tested in accordance with ASTM E 119 or UL 263. Fire-resistance-rated floor/ceiling and wall assemblies shall extend to and be tight against the exterior wall, and wall assemblies shall extend from the foundation to the underside of the roof sheathing.

(k) *Section R302.5.1 Opening protection*; amend to read as follows:

**R302.5.1 Opening protection.** Openings from a private garage directly into a room used for sleeping purposes shall not be permitted. Other openings between the garage and residence shall be equipped with solid wood doors not less than 13/8 inches (35 mm) in thickness, solid or honeycomb-core steel doors not less than 13/8 inches (35 mm) thick, or 20-minute fire-rated doors, equipped with a self-closing device.

Exception: A self-closing device is not required in one-family dwellings.

(l) *Table R302.6 Dwelling/Garage Separation*; amend to read as follows:

TABLE R302.6 DWELLING/GARAGE SEPARATION

SEPARATION	MATERIAL
From the residence and attics	Not less than 5/8-inch gypsum board or equivalent applied to the garage side



From all habitable rooms above the garage	Not less than 5/8-inch Type X gypsum board or equivalent
Structure(s) supporting floor/ceiling assemblies used for separation required by this section	Not less than 5/8-inch gypsum board or equivalent
Garages located less than 3 feet from a dwelling unit on the same lot	Not less than 5/8-inch gypsum board or equivalent applied to the interior side of exterior walls that are within this area

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

- (m) *Section R311.3.1 Floor elevations at the required egress doors*; amend to read as follows:

**R311.3.1 Floor elevations at the required egress doors.** Landings or finished floors at the required egress door shall not be more than 1 1/2 inches (38 mm) lower than the top of the threshold.

**Exception:** The landing or floor on the exterior side shall not be more than 7 3/4 inches (196 mm) below the top of the finished floor provided the door does not swing over the landing or floor.

Where exterior landings or floors serving the required egress door are not at grade, they shall be provided with access to grade by means of a ramp in accordance with Section R311.8 or a stairway in accordance with Section R311.7.

- (n) *Section R311.3.2 Floor elevations for other exterior doors*; amend to read as follows:

**R311.3.2 Floor elevations for other exterior doors.** Doors other than the required egress door shall be provided with landings or floors not more than 7 3/4 inches (196 mm) below the top of the finished floor.

**Exception:** A landing is not required where a stairway of four or fewer risers is located on the exterior side of the door, provided the door does not swing over the stairway.

- (o) *Add Section R302.7 Under stair protection* to read as follows:

**R302.7 Under stair protection.** Enclosed accessible space under stairs shall have walls, under stair surface and any soffits protected on the enclosed side with 1/2-inch (13 mm) gypsum board.

- (p) *Section R313 Automatic Fire Sprinkler Systems*; strike section in its entirety and amend to read as follows:

**Section R313 Reserved**

- (q) *Section R403.1 General*; amend to read as follows:

**R403.1, General.** All exterior walls shall be supported on continuous concrete footings, or other approved structural systems which shall be of sufficient design to accommodate all loads according to Section R301 and to transmit the resulting loads to the soil within the limitations as determined from the character or the soil. Footings shall be supported on undisturbed natural soils or engineered fill.

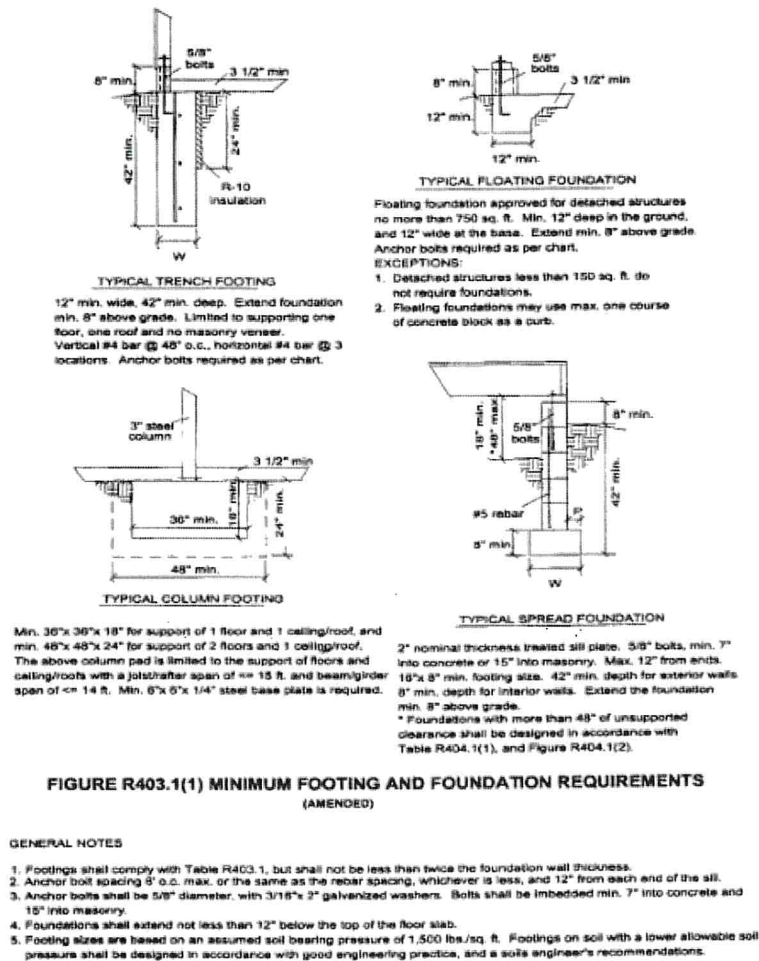
- (r) *Section R403.1.1 Minimum size*; amend to read as follows:

**R403.1.1, Minimum size.** Minimum sizes for concrete and masonry footings shall be as set forth in Table R403.1 and Figure R403.1(1). The footing width, W, shall be based on the load-bearing value of the soil in accordance with Table R401.4.1. Spread footings shall be at least 8 inches (203 mm) thick. Footing projections, P, shall be at least 2 inches (51 mm) and shall not exceed the thickness of the footing. The size of footings supporting piers and columns shall be based on the tributary load and allowable soil pressure in accordance with Table R 401.4.1. Footings for wood foundations shall be in accordance with the details set forth in Section R403.3, and Figures R403.1(2) and R403.1(3).

- (s) *Section R403.1.1 Minimum size*; amend to read as follows:

**R403.1.1, Minimum size.** Minimum sizes for concrete and masonry footings shall be as set forth in Table R403.1 and Figure R403.1(1). The footing width, W, shall be based on the load-bearing value of the soil in accordance with Table R401.4.1. Spread footings shall be at least 8 inches (203 mm) thick. Footing projections, P, shall be at least 2 inches (51 mm) and shall not exceed the thickness of the footing. The size of footings supporting piers and columns shall be based on the tributary load and allowable soil pressure in accordance with Table R 401.4.1. Footings for wood foundations shall be in accordance with the details set forth in Section R403.3, and Figures R403.1(2) and R403.1(3).

(t) *Figure R403.1(1);* replace figure with the following:



(u) *Figure R403.1(2);* amend all references to gravel footings to read as follows:

Footings shall comply with Section R403.

(v) *Figure R403.1(3);* amend all references to gravel footings to read as follows:

Footings shall comply with Section R403.

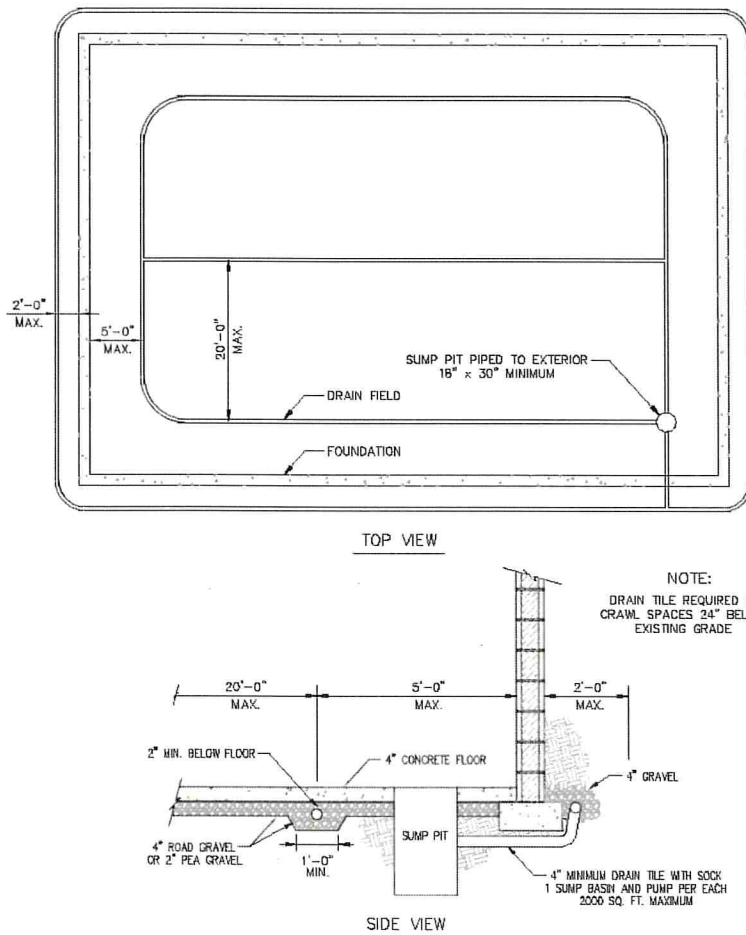
(w) *Section R403.2 Footings for wood foundations;* amend to read as follows:

**R403.2 Footings for wood foundations.** Footings for wood foundations shall be in accordance with Figures R403.1(2) and R403.1(3).

- (x) *Section R405.1*; amend to read as follows:

R405.1 Concrete or masonry foundations. Drains shall be provided in accordance with Figure R405.1(1), around all concrete or masonry foundations that retain earth and enclose habitable or usable spaces, including crawl spaces with a depth of 24 inches (609.6 mm) below grade.

**FIGURE R405.1(1) DRAIN TILE PLAN**



1. Tremco DrainStar Stripdrain Drainage System as an exterior drain tile alternate.

**Section R405.1 Reserved**

- (y) *Section R302.13 Fire protection of floors*; strike section in its entirety.

- (z) *Section R908 Reroofing*; amend to read as follows:

**R908 Reroofing Reserved.**



## **ARTICLE 5. ELECTRICAL CODE**

### **Sec. 9-501. National Electrical Code adopted.**

NFPA 70: National Electrical Code, 2017 edition, as recommended by the National Fire Protection Agency (NFPA), and herein adopted by the City of Fremont is hereby amended to include the following local amendments.

### **Sec. 9-502. City of Fremont local amendments.**

- (a) *Section 90.2(B) Not Covered*; add subsection (6) to read as follows:
  - (6) Installations of electrical fixtures, equipment or connections pertaining to or repair of communication signal system or low voltage control of gas facilities of utilities except as to their initial connection to the supply line.
- (b) *Section 210.5(C)(1) Branch Circuits Supplied from More Than One Normal Voltage System*; amend to read as follows:
  - (1) **Branch Circuits Supplied from More Than One Nominal Voltage System.** Where the premises wiring system has branch circuits supplied from one nominal voltage system, each undergrounded conductor of a branch circuit shall be identified by phase or line and system at all termination, connection, and splice points in compliance with 210.5(C)(1)(a) and (b).
    - (a) **Means of Identification.** The means of identification shall be permitted to be by separate color coding, marking tape, tagging, or other approved means.
    - (b) **Posting of Identification Means.** The method utilized for conductors originating within each branch-circuit panelboard or similar branch-circuit distribution equipment shall be documented in a manner that is readily available or shall be permanently posted at each branch-circuit panelboard or similar branch-circuit distribution equipment. The label shall be of sufficient durability to withstand the environment involved and shall not be handwritten.
- (c) *Section 210.8(A) Dwelling Units*; add subsection (11) to read as follows:
  - (11) Any GFCI receptacle that is supplying power to a condensate pump, sump pump, flood pump, sewage pump, or ejector pump shall have a built-in audible alarm sound when the GFCI is in the open or tripped position.
- (d) *Section 210.11(C)(3) Bathroom Branch Circuits*; amend to read as follows:
  - (3) **Bathroom Branch Circuits.** In addition to the number of branch circuits required by other parts of this section, at least one 120-volt, 20-ampere branch circuit shall be allowed to supply only one bathroom receptacle outlet(s).  
[Exception Unchanged]
- (e) *Section 230.43 Wiring Methods for 1000 Volts, Nominal, or Less*; amend to read as follows:
  - 230.43 Wiring Methods for 1000 Volts, Nominal, or Less.** Service-entrance conductors shall be installed in accordance with the applicable requirements of this Code covering the type of wiring method used and shall be limited to the following methods:

- 
- (1) Rigid metal conduit (RMC)
  - (2) Electrical metallic tubing (EMT)
  - (3) Electrical nonmetallic tubing
  - (4) Wireways
  - (5) Busways
  - (6) Auxiliary gutters
  - (7) Rigid polyvinyl chloride conduit (PVC)
  - (8) Cablebus
  - (9) Flexible metal conduit (FMC) not over 1.8 m (6 ft) long or liquidtight flexible metal conduit (LFMC) not over 1.8 m (6 ft) long between a raceway, or between a raceway and service equipment, with a supply-side bonding jumper routed with the flexible metal conduit (FMC) or the liquidtight flexible metal conduit (LFMC) according to the provisions of 250.102(A), (B), (C), and (E)
  - (10) Liquidtight flexible nonmetallic conduit (LFNC)
  - (11) High Density polyethylene conduit (HDPE)
  - (12) Nonmetallic underground conduit with conductors (NUCC)
  - (13) Reinforced thermosetting resin conduit (RTRC)

(f) *Section 230.70(A) Location*; amend to read as follows:

**(A) Location.** The service disconnecting means shall be installed in accordance with 230.70(A)(1), (A)(2), and (A)(3).

The nearest point of entrance inside a building shall have a maximum of six feet of approved raceway from the point of entrance at the exterior wall. The distance can be increased from six feet to ten feet if Rigid Metal Conduit is used as the raceway.

(g) *Section 230.71 General*; amend to read as follows:

**(A) General.** The service disconnecting means for each service permitted by Section 230.2, or for each set of service entrance conductors permitted by Section 230.40, Exception No. 1, No. 3, No. 4, or No. 5, shall consist of not more than six switches or six circuit breakers mounted in a single enclosure, (400 amps or over) in a group of separate enclosures, or in or on a switchboard or in switchgear. There shall be no more than six disconnects per service (400 amps or over) grouped in any one location. One main breaker or one set of main fuses per enclosure shall be allowed on services rated less than 400 amps on all electrical services,

(h) *Section 330.104 Conductors*; amend to read as follows:

**330.104 Conductors.** Conductors shall be of copper, aluminum, copper-clad aluminum, nickel or nickel-coated copper, solid or stranded. The minimum conductor size shall be No. 14 copper and No. 8 aluminum or copper-clad aluminum.

(i) *Section 334.10 Uses Permitted*; amend to read as follows:

**334.10 Uses Permitted.** Type NM, Type NMC, and Type NMS cables shall be permitted to be used in one and two family dwellings and associated garages and sheds, and multi-family dwellings three stories or less in height, except as prohibited in Section 334.12.

(j) *Section 340.12 Uses Not Permitted*; add exception to read as follows:

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**Exception:** One-family, two-family and multi-family residential dwellings three stories or less in height.

- (k) *Section 422.31(B) Appliances Rated over 300 Volt-Amperes*; amend to read as follows:

**(B) Appliances Rated over 300 Volt-Amperes.** For permanently connected appliances rated over 300 volt-amperes, the branch-circuit switch or circuit breaker shall be permitted to serve as the disconnecting means where the switch or circuit breaker is within sight from the appliance.

[Informational Note Unchanged]

- (l) *Section 440.14 Location*; amend to read as follows:

**440.14 Location.** Disconnecting means shall be located within sight from and readily accessible from the air-conditioning or refrigerating equipment. The disconnecting means shall be permitted to be installed on or within the air-conditioning or refrigerating equipment and shall be of dead front construction as accepted by NEMA Standards, except on non-accessible roof units.

The disconnecting means shall not be located on panels that are designed to allow access to the air-conditioning or refrigeration equipment or to obscure the equipment nameplate(s).

[Exception and Informational Notes Unchanged]

- (m) *ARTICLE 505 Zone 0, 1, and 2 Location*; strike article in its entirety and amend to read as follows:

**ARTICLE 505 RESERVED**

- (n) *Section 545.10 Receptacle or Switch with Integral Enclosure*; amend to read as follows:

**545.10 Reserved.**

- (o) *Section 590.3(B) 90 Days*; amend to read as follows:

**(B) 90 Days.** Temporary electric power and lighting installation shall be permitted for a period not to exceed 90 days for holiday decorative lighting and similar purposes. Any appliance that is installed shall be allowed to be temporarily wired for a maximum of 5 working days.

- (p) *Section 800.1 Scope*; amend to read as follows:

**800.1 Scope.** This article covers communications circuits and equipment. No permits shall be required nor do contractors need to be licensed to perform work which is covered by this article.

[Informational Notes Unchanged]

- (q) *Section 810.1 Scope*; amend to read as follows:

**810.1 Scope.** This article covers antenna systems for radio and television receiving equipment, amateur and citizen band radio transmitting and receiving equipment, and certain features of transmitter safety. This article covers antennas such as wire-strung type, multi-element, vertical rod, flat, or parabolic and also covers the wiring and cabling that connect them to equipment. This article does not cover equipment and antennas used for coupling carrier current to power line conductors. No permits shall be required nor do contractors need to be licensed to perform work which is covered by this article.

- (r) *Section 820.1 Scope*; amend to read as follows:

**820.1 Scope.** This article covers coaxial cable distribution of radio frequency signals typically employed in community antenna television (CATV) systems. No permits shall be required nor do contractors need to be licensed to perform work which is covered by this article.

## **ARTICLE 6. EXISTING BUILDING CODE**



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## **Sec. 9-601. International Existing Building Code adopted.**

The International Existing Building Code, ~~2015~~2018 edition, as recommended by the International Code Council (ICC), and herein adopted by the City of Fremont is hereby amended to include the following local amendments.

## **Sec. 9-602. City of Fremont local amendments.**

Reserved.

# **ARTICLE 7. MECHANICAL CODE**

## **Sec. 9-701. Uniform Mechanical Code adopted.**

The Uniform Mechanical Code, ~~2015~~2018 edition, as recommended by the International Association of Plumbing and Mechanical Officials (IAPMO), and herein adopted by the City of Fremont is hereby amended to include the following local amendments.

## **Sec. 9-702. City of Fremont local amendments.**

- (a) *Section 104.5 Fees*; amend to read as follows:

**104.5 Fees.** Fees shall be assessed in accordance with the provisions of this code and shall be paid as required, in accordance with the schedule as established by the applicable governing authority.

- (b) *Section 506.1 Materials*; strike exception number 3.

- (c) *Section 506.2 Construction*; strike exception number 2.

- (d) *Section 510.9.2 Wall Terminations*; add exception number 6 to read as follows:

(6) The exhaust from any hood serving commercial food heat- processing equipment terminating at/or across the property line adjoining a public way if the air is discharged away from neighboring building and is at least 10 feet from the air intake of the same or contiguous buildings, and where approval is given by City Council.

- (e) *Section 916.2.1.1 Unvented Room Heaters*; strike exception numbers 1 and 2.

- (f) *Section 1006.1 General*; add paragraph two to read as follows:

Temperature and relief valve downtubes shall be copper or metal piping with an inside diameter of the piping no less than the temperature, pressure, and vacuum relief device. The terminal end of the downtube shall not be threaded.

- (g) *Section 1308.2 Provision for Location of Point of Delivery*; amend to read as follows:

The location of the point of delivery shall be acceptable to the serving gas supplier and extend 6 inches (152.4 mm) beyond the exterior surface of the structure. Gas piping shall be sleeved with plastic pipe or an approved inert material when passing through any exterior wall or any interior concrete or masonry wall. The interior space between the gas piping and sleeve shall be sealed at the wall to prevent entry of water, insects, or rodents.[NFPA 54:5.2]

- (h) *Section 1308.5.2.2 Copper and Brass*; amend to read as follows:

**1308.5.2.2 Prohibited.**

- 
- (i) *Section 1308.5.2.3 Aluminum Alloy*; amend to read as follows:

**1308.5.2.3 Prohibited.**

- (j) *Section 1308.5.3 Metallic Tubing*; amend to read as follows:

**1308.5.3 Prohibited.**

- (k) *Section 1308.5.3.1 Steel*; amend to read as follows:

**1308.5.3.1 Reserved.**

- (l) *Section 1308.5.3.2 Copper and Brass*; amend to read as follows:

**1308.5.3.2 Prohibited.**

- (m) *Section 1308.5.3.3 Aluminum Alloy*; amend to read as follows:

**1308.5.3.3 Prohibited.**

- (n) *Section 1308.5.3.4 Corrugated Stainless Steel*; amend to read as follows:

**1308.5.3.4 Corrugated Stainless Steel.** Corrugated stainless steel tubing shall be tested and listed in compliance with the construction, installation, and performance requirements of INS LC-1 Standard for Fuel Gas Piping Systems using Corrugated Stainless Steel Tubing.

Corrugated stainless steel tubing that requires additional bonding shall be inspected and certified by a master electrical contractor licensed with the State of Nebraska with a copy of the certification provided to the City.

Only corrugated stainless steel tubing that has a metal shield that dissipates electricity and heat and requires no additional manufacturer bonding is allowed. [NFFA 54.5.6.3.4]

- (o) *Section 1308.0 Steel and Wrought Iron*; amend to read as follows:

**1308.0 Steel and Wrought Iron.** Metal gas pipe shall be standard-weight wrought iron or steel (galvanized or black), yellow brass containing not more than 75 percent copper, or internally tinned or treated copper of iron pipe size. Galvanizing shall not be considered protection against corrosion.

Standard wrought iron or steel black pipe (Schedule 40) shall be permitted to be used with gases not corrosive to such material. Steel tubing shall comply with ASTM A 254. Copper tubing shall comply with ASTM B 88 or ASTM B 280.

Copper tubing (unless tin-lined) shall not be used where the gas contains more than an average of 0.3 grains of hydrogen sulfide per 100 standard cubic feet (0.7 mg/100 L) of gas. [NFPA 501A:4.3.6.1]

- (p) *Section 1314.3 Test Pressure*; amend to read as follows:

**1314.3 Test Pressure.** This inspection shall include an air, CO<sub>2</sub>, or nitrogen pressure test, at which time the gas piping shall stand a pressure of not less than 30 psi (206.84 kPa) gauge pressure. Test pressures shall be held for a length of time satisfactory to the Authority Having Jurisdiction, but in no case less than 30 minutes with no perceptible drop in pressure. For welded piping, and for piping carrying gas at pressures in excess of 14 inches water column pressure (3.5 kPa), the test pressure shall be not less than 60 psi (414 kPa) and shall be continued for a length of time satisfactory to the Authority Having Jurisdiction, but in no case for less than 30 minutes.

These tests shall be made using air, CO<sub>2</sub>, or nitrogen pressure and shall be made in the presence of the Authority Having Jurisdiction. Necessary apparatus for conducting tests shall be furnished by the permit holder.



## ARTICLE 8. PLUMBING CODE

### Sec. 9-801. Uniform Plumbing Code adopted.

The Uniform Plumbing Code, ~~2015~~2018 edition, as recommended by the International Association of Plumbing and Mechanical Officials (IAPMO), and herein adopted by the City of Fremont is hereby amended to include the following local amendments.

### Sec. 9-802. City of Fremont local amendments.

(a) *Section 104.5 Fees*; amend to read as follows:

**104.5 Fees.** Fees shall be assessed in accordance with the provisions of this code and shall be paid as required, in accordance with the schedule as established by the applicable governing authority.

(b) *Table 104.5 Plumbing Permit Fees*; strike table in its entirety.

(c) *Table 422.1. Minimum Plumbing Facilities*; replace table in its entirety with the following:

TABLE 422.1  
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES<sup>a</sup>  
(See Section 422.0 et seq.)

NO.	Classification	Occupancy	Description	Water Closets (Urinals See Section 419.2)		Lavatories		Bathtubs/ Showers	Drinking Fountain <sup>e,f</sup>  (See Section 410.1)	Other
				Male	Female	Male	Female			
1	Assembly	A-1 <sup>d</sup>	Theaters and other buildings for the performing arts and motion pictures	1 per 125	1 per 65	1 per 200		—	1 per 500	1 ser sink
		A-2 <sup>d</sup>	Nightclubs, bars, taverns, dance halls and buildings for similar purposes	1 per 40	1 per 40	1 per 75		—	1 per 500	1 ser sink
			Restaurants, banquet halls and food courts	1 per 75	1 per 75	1 per 200		—	1 per 500	1 ser sink
		A-3 <sup>d</sup>	Auditoriums without permanent	1 per 125	1 per 65	1 per 200		—	1 per 500	1 ser sink

			seating, art galleries, exhibition halls, museums, lecture halls, libraries, arcades and gymnasiums							
			Passenger terminals and transportation facilities	1 per 500	1 per 500	1 per 750		—	1 per 1,000	1 ser sink
			Places of worship and other religious services	1 per 150	1 per 75	1 per 200		—	1 per 1,000	1 ser sink
		A-4	Coliseums, arenas, skating rinks, pools and tennis courts for indoor sporting events and activities	1 per 75 for the first 1,500 and 1 per 120 for the remainder exceeding 1,500	1 per 40 for the first 1,520 and 1 per 60 for the remainder exceeding 1,520	1 per 200	1 per 150	—	1 per 1,000	1 ser sink
		A-5	Stadiums, amusement parks, bleachers and grandstands for outdoor sporting events and activities	1 per 75 for the first 1,500 and 1 per 120 for the remainder exceeding 1,500	1 per 40 for the first 1,520 and 1 per 60 for the remainder exceeding 1,520	1 per 200	1 per 150	—	1 per 1,000	1 ser sink
2	Business	B	Buildings for the transaction of business, professional services, other services involving merchandise, office buildings, banks, light industrial and similar uses	1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50		1 per 40 for the first 80 and 1 per 80 for the remainder exceeding 80		—	1 per 100	1 ser sink <sup>g</sup>

3	Education	E	Educational facilities	1 per 50	1 per 50	—	1 per 100	1 ser sink
4	Factory and industrial	F-1 and F-2	Structures in which occupants are engaged in work fabricating, assembly or processing of products or materials	1 per 100	1 per 100	(see Section 411)	1 per 400	1 ser sink
5	Institutional	I-1	Residential care	1 per 10	1 per 10	1 per 8	1 per 100	1 ser sink
		I-2	Hospitals, ambulatory nursing home care recipient	1 per room <sup>c</sup>	1 per room <sup>c</sup>	1 per 15	1 per 100	1 ser sink
			Employees, other than residential care <sup>b</sup>	1 per 25	1 per 35	—	1 per 100	—
			Visitors, other than residential care	1 per 75	1 per 100	—	1 per 500	—
		I-3	Prisons <sup>b</sup>	1 per cell	1 per cell	1 per 15	1 per 100	1 ser sink
			Reformatories, detention centers, and correctional centers	1 per 15	1 per 15	1 per 15	1 per 100	1 ser sink
			Employees	1 per 25	1 per 35	—	1 per 100	
		I-4	Adult day care and child day care	1 per 15	1 per 15	1	1 per 100	1 ser sink
6	Mercantile	M	Retail stores, service stations, shops, salesrooms, markets and shopping centers	1 per 500	1 per 750	—	1 per 1,000	1 ser sink <sup>g</sup>
7	Residential	R-1	Hotels, motels, boarding	1 per sleeping unit	1 per sleeping unit	1 per sleeping unit	—	1 ser sink

			houses (transient)					
		R-2	Dormitories, fraternities, sororities and boarding houses (non-transient)	1 per 10	1 per 10	1 per 8	1 per 100	1 ser sink
		R-2	Apartment house	1 per dwelling unit	1 per dwelling unit	1 per dwelling unit	—	1 kit sink   dwel unit; auto cloth wash conn per 2 dwel units
		R-3	Congregate living facilities with 16 or fewer persons	1 per 10	1 per 10	1 per 8	1 per 100	1 ser sink
		R-3	One- and two-family dwellings	1 per dwelling unit	1 per dwelling unit	1 per dwelling unit	—	1 kit sink   dwel unit; auto mati cloth wash connecti per dwel unit
		R-4	Congregate living facilities with 16 or fewer persons	1 per 10	1 per 10	1 per 8	1 per 100	1 ser sink
8	Storage	S-1 S-2	Structures for the storage of goods, warehouses, store house and freight depots. Low and Moderate Hazard.	1 per 100	1 per 100	See Section 411	1 per 1,000	1 ser sink

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- a. The fixtures shown are based on one fixture being the minimum required for the number of persons indicated or any fraction of the number of persons indicated. The number of occupants shall be determined by the International Building Code.
  - b. Toilet facilities for employees shall be separate from facilities for inmates or care recipients.
  - c. A single-occupant toilet room with one water closet and one lavatory serving not more than two adjacent patient sleeping units shall be permitted where such room is provided with direct access from each patient sleeping unit and with provisions for privacy.
  - d. The occupant load for seasonal outdoor seating and entertainment areas shall be included when determining the minimum number of facilities required.
  - e. The minimum number of required drinking fountains shall comply with Table 403.1 and Chapter 11 of the International Building Code.
  - f. Drinking fountains are not required for an occupant load of 15 or fewer.
  - g. For business and mercantile occupancies with an occupant load of 15 or fewer, service sinks shall not be required.
  - (d) *Section 504.1 Location*; amend to read as follows:

**504.1 Location.** Water heater installations in bedrooms and bathrooms shall only be permitted where water heater is of the direct vent type. [NFPA 54:10.28.1(2)]
  - (e) Add *Section 504.7 Temperature and Relief Valve Downtubes* to read as follows:

**504.7 Temperature and Relief Valve Downtubes.** Temperature and relief valve downtubes shall be copper, metal piping, or approved PVC, with a temperature, pressure, and vacuum relief device. The terminal end of the downtube shall not be threaded.
  - (f) *Section 507.5 Relief Valve Discharge*; amend to read as follows:

**507.5 Reserved.**
  - (g) *Section 603.1 General*; add exception to read as follows:

**Exception:** Backflow devices for residential lawn sprinkler systems need only be tested when installed and at least once every 5 years.
  - (h) *Table 604.1 Materials For Building Supply And Water Distribution Piping And Fitting*; strike materials CPVC, PE, and PVC.
  - (i) *Section 604.3 Copper Tube*; amend exception to read as follows:

**Exception:** Type M copper tubing shall be permitted to be used for water piping where piping is aboveground in, or on, a building.
  - (j) *Section 604.10 Plastic Materials*; amend to read as follows:

**604.10 Reserved.**
  - (k) *Section 605.9 PEX Plastic Tubing and Joints*; amend to read as follows:

**605.9 PEX Plastic Tubing and Joints.** PEX plastic tubing and fitting joining methods shall be installed in accordance with the manufacturer's installation instructions and shall comply with Section 605.9.1 and Section 605.9.2. Other method approved by the Authority Having Jurisdiction.
  - (l) *Section 608.4 Pressure Relief Valves*; amend to read as follows:

**Section 608.4 Pressure Relief Valves.** Each pressure relief valve shall be an approved automatic type with drain, and each such relief valve shall be set at a pressure of not more than 150 psi (1034 kPa). No shutoff valve shall be installed between the relief valve and the system or in the drain line in accordance with ANSI Z21.22.
  - (m) *Section 608.5 Discharge Piping*; amend to read as follows:



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**608.5 Discharge Piping.** Relief valves located inside a building shall be provided with a drain, not smaller than the relief valve outlet, of galvanized steel, hard-drawn copper piping and fittings, CPVC, PP, or listed relief valve drain tube with fittings that will not reduce the internal bore of the pipe or tubing (straight lengths as opposed to coils) and shall extend from the valve to 6 inches (152 mm) above the floor near an approved drain. Relief valve drains shall not terminate in a buildings crawl space. No part of such drain pipe shall be trapped or subject to freezing. The terminal end of the drain pipe shall not be threaded.

- (n) *Section 609.2 Trenches;* amend to read as follows:

**609.2 Trenches.** Water pipes shall not be run or laid in the same trench as building sewer or drainage piping constructed of clay or materials that are not approved for use with a building.

- (o) *Section 611.4 Sizing of Residential Softeners;* amend to read as follows:

**611.4 Reserved.**

- (p) *Section 701.2 Drainage Piping;* amend material standard number 2 to read as follows:

ABS and PVC DWV piping installations shall be installed in accordance with applicable standards referenced in Table 1701.1 and Chapter 14 "Firestop Protection." Except for individual single-family dwelling units, materials exposed within ducts or plenums shall have a flame-spread index of a maximum of 25 and a smoke-developed index of a maximum 50, where tested in accordance with ASTM E 84 and UL 723. ABS and PVC DWV piping installation shall be limited to those structures where combustible construction is allowed and the structure is no more than three stories in height above grade.

- (q) *Table 701.2 Materials For Drain, Waste, Vent Pipe And Fittings;* amend table to prohibit Asbestos-Cement, Co-Extruded ABS (Schedule 40), Co- Extruded PVC (Schedule 40), Copper (Type DWV), Polyethylene, and Stainless Steel 316L material listings from Building Sewer Pipe and Fittings applications. Also, add footnote 1, and associate footnote 1 with material listing PVC (Schedule 40), to include "SDR 26" as permitted in Building Sewer Pipe and Fittings applications.

- (r) *Section 906.1 Roof Termination;* amend to read as follows:

**906.1 Roof Termination.** Each vent pipe or stack shall extend through its flashing and shall terminate vertically not less than 10 inches (254 mm) above the roof nor less than 1 foot (305 mm) from a vertical surface.

- (s) *Section 1208.2 Provision for Location of Point of Delivery;* amend to read as follows:

**1208.2 Provision for Location of Point of Delivery.** The location of the point of delivery shall be acceptable to the serving gas supplier and extend 6 inches (152.4 mm) beyond the exterior surface of the structure. Gas piping shall be sleeved with plastic pipe or an approved inert material when passing through any exterior wall or any interior concrete or masonry wall. The interior space between the gas piping and sleeve shall be sealed at the wall to prevent entry of water, insects, or rodents.(NFPA 54:5.2)

- (t) *Section 1208.5.2.2 Copper and Copper Alloy;* amend to read as follows:

**1208.5.2.2 Reserved.**

- (u) *Section 1208.5.2.3 Aluminum Alloy;* amend to read as follows:

**1208.5.2.3 Reserved.**

- (v) *Section 1208.5.3 Metallic Tubing;* amend to read as follows:

**1208.5.3 Reserved.**

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(w) *Section 1208.5.3.1 Steel*; amend to read as follows:

**1208.5.3.1 Reserved.**

(x) *Section 1208.5.3.2 Copper and Brass*; amend to read as follows:

**1208.5.3.2 Reserved.**

(y) *Section 1208.5.3.3 Aluminum Alloy*; amend to read as follows:

**1208.5.3.3 Reserved.**

(z) *Section 1208.5.3.4 Corrugated Stainless Steel*; amend to read as follows:

**1208.5.3.4 Reserved.**

(aa) *Section 1208.5.8.2 Tubing Joints*; amend to read as follows:

**1208.5.8.2 Prohibited.**

(bb) *Section 1208.5.8.3 Flared Joints*; amend to read as follows:

(cc) *Section 1210.1.7 Plastic Piping*; strike exception number 2.

(dd) *Section 1210.13 Systems Containing Gas-Air Mixtures Outside the Flammable Range*; amend to read as follows:

**1012.13 Reserved.**

(ee) *Section 1210.14 Systems Containing Flammable Gas-Air Mixtures*; amend to read as follows:

**1012.14 Reserved.**

(ff) *Section 1213.3 Test Pressure*; amend to read as follows:

**1213.3 Test Pressure.** This inspection shall include an air, CO<sub>2</sub>, or nitrogen pressure test, at which time the gas piping shall stand a pressure of not less than 30 psi (206.84 kPa) gauge pressure. Test pressures shall be held for a length of time satisfactory to the Authority Having Jurisdiction, but in no case less than 30 minutes with no perceptible drop in pressure. For welded piping, and for piping carrying gas at pressures in excess of 14 inches water column pressure (3.5 kPa), the test pressure shall be not less than 60 psi (414 kPa) and shall be continued for a length of time satisfactory to the Authority Having Jurisdiction, but in no case for less than 30 minutes.

These tests shall be made using air, CO<sub>2</sub>, or nitrogen pressure and shall be made in the presence of the Authority Having Jurisdiction. Necessary apparatus for conducting tests shall be furnished by the permit holder. Test gauges used in conduction tests shall be in accordance with Section 318.0

## **ARTICLE 9. FUEL GAS CODE**

### **Sec. 9-901. International Fuel Gas Code adopted.**

The International Fuel Gas Code, ~~2015~~ 2018 edition, as recommended by the International Code Council (ICC), and herein adopted by the City of Fremont is hereby amended to include the following local amendments.

### **Sec. 9-902. City of Fremont local amendments.**

Reserved.

## **ARTICLE 10. PROPERTY MAINTENANCE CODE**

### **Sec. 9-1001. International Property Maintenance Code adopted.**

The International Property Maintenance Code, ~~2015~~2018 edition, as recommended by the International Code Council (ICC), and herein adopted by the City of Fremont is hereby amended to include the following local amendments.

### **Sec. 9-1002. City of Fremont local amendments.**

- (a) *Section [A]102.3 Application of other codes*; amend to read as follows:

**[A] 102.3 Application of other codes.** Repairs, additions or alterations to a structure, or changes of occupancy, shall be done in accordance with the procedures and provisions of the *International Building Code, International Energy Conservation Code, International Fire Code, International Fuel Gas Code, Uniform Mechanical Code, International Residential Code, Uniform Plumbing Code* and NFPA 70.

- (b) *Section [A]107.2 Form*; amend item number 4 to read as follows:

4. Include a correction order allowing a reasonable time to make the repairs and improvements required to bring the property, *dwelling unit*, or structure into compliance with the provisions of this code.

- (c) *Section [A]111.1 Application for appeal*; amend to read as follows:

**[A] 111.1 Application for appeal.** Any person directly affected by a decision of the code official or a notice or order issued under this code shall have the right to appeal to the board of appeals, provided that a written application for appeal is filed within 10 days after the day the decision, notice or order was served. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted thereunder have been incorrectly interpreted.

- (d) *Section [A]111.2 Membership of board*; amend to read as follows:

**[A] 111.2 Membership of board.** The board of appeals shall consist of a minimum of five members who are qualified by experience and training to pass on matters pertaining to property maintenance and who are not employees of the jurisdiction. The code official shall be an ex-officio member but shall have no vote on any matter before the board. The board shall be appointed by the chief appointing authority, and shall serve staggered and overlapping terms.

- (e) *Section [A]111.2.4 Secretary*; amend to read as follows:

**[A] 111.2.4 Secretary.** The *code official* shall serve as secretary to the board. The secretary shall maintain a detailed record of all proceedings in the office of the *code official*.

- (f) *Section [A]111.6 Board decision*; amend to read as follows:

**[A] 111.6 Board decision.** The board shall modify or reverse the decision of the *building official* only by a concurring vote of two-thirds of its members.

- (g) *Section [A]111.6.1 Records and copies*; amend to read as follows:

**[A] 111.6.1 Records and copies.** The decision of the board shall be recorded. Copies shall be furnished to the appellant.

- (h) *Section [A]111.7 Court review*; amend to read as follows:



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[A] **111.7 Council review.** Any person, whether or not a previous party of the appeal, shall have the right to apply to the governing body of the city for reversal or affirmation, wholly or partly, the decision of the board. Application for review shall be made in the manner and time required by law following the filing of the decision in the office of the chief administrative officer.

## **ARTICLE 11. ENERGY CONSERVATION CODE**

### **Sec. 9-1101. International Energy Conservation Code adopted.**

The International Energy Conservation Code, ~~2009-2018 edition with amendments~~, as recommended by the International Code Council (ICC), and herein adopted by the City of Fremont is hereby amended to include the following local amendments.

### **Sec. 9-1102. City of Fremont amendments.**

- (a) Delete Blower Test
- (b) Amend the duct testing to provide the option of adding spray foam insulation to ductwork located in the unconditioned space in lieu of sealing and then testing the ductwork. The rationale is that the cost associated with testing the ductwork is comparable to the application of spray foam around the ductwork in the cold attic space.
- (c) Wall cavities may be used as duct or plenum if completely panned and sealed.
- (d) Mandatory requirement for mechanical ventilations has been deleted.
- (e) Basement walls need to be insulated with R13 in lieu of R15 or R19.

Reserved.

## **ARTICLE 12. TO WHOM PERMITS MAY BE ISSUED**

### **Sec. 9-1201. Permit issuance.**

- (a) *Reserved.*
- (b) *Electrical, Mechanical, and Plumbing Codes.* No permit shall be issued to any person to do or cause to be done any work regulated by electrical, mechanical, plumbing or fuel gas codes, except to a person holding a valid, unexpired and unrevoked Master Registration, issued by the City, as more fully described herein.

Exception:

1. Any homeowner may install electrical wiring (not including electrical service equipment or electrical wiring associated with spas, hot tubs, underground swimming pools, or pools used for therapeutic use), heating or air conditioning equipment, and plumbing fixtures or water conditioning appurtenances in a single-family residence which is owned and occupied by the individual performing the work. The homeowner shall own both the single-family residence and the land or property that the residence is located on. All work shall be for the personal enjoyment of the homeowner without compensation or pay from or to any other person for such labor or installation. The homeowner shall be required to file plans, apply for and secure a permit, pay applicable fees, and call for inspection - such installation being compliant with the requirements of this code. Nothing herein shall be construed to authorize the homeowner to